From: Sent: To: Subject: Nickol, Gary Saturday, December 08, 2001 11:36 AM STIC-Biotech/ChemLib 09/680121

Please search and Interference search the following:

- 1) DNA of SEQ ID NO:1
- 2) DNA encoding SEQ ID NO:2
- 3) Amino acids of SEQ ID NO:2

Thanks,

Gary Nickol Ph.D. AU:1642, Room 8D09, Mailbox 8E12 703-305-7143

Point of Contact:
Toby Port
Technical Info. Specialist
CM1 4E01TEL: 308-3534
/2014

DEC 10 2001

Searcher:	
Phone:	
Location:	
Date Picked Up: 12/12	
Date Completed:	
Searcher Prep/Review: 1/10	
Clerical:	
Online time: 10	

TYPE OF SEARCH:
NA Sequences: 2
AA Sequences: /
Structures:
Bibliographic:
Litigation:
Full text:
Patent Family:
Othory

VENDOR/COST(where applic.)
STN:
DIALOG:
Questel/Orbit:
DRLink:
Lexis/Nexis:
Sequence Sys.:
WWW/Internet:
Other (specify):

"IS PAGE BLANK USPTO)

Point of Contact:
Toby Port
Technical Info. Specialist
CM1 1E01 TEL: 308-3534

```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on:
                                                                                                                                                                                                                                                                                                                                                                                                                         GenEmbl:*
1: gb_ba:*
2: gb_htg:
3: gb_in:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTITY_NUC Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    December 12, 2001, 10:54:04; Search time 5414.84 Seconds (without alignments) 11854.556 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1472140 seqs, 8248589755 residues
                                                                                                                                                                                                                                                                                                              gb_pl:*
gb_pr:*
gb_pr:*
gb_ro:*
gb_sts:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                     gb_ba:*
gb_htg:*
                                                                                                                                                                                                                                                                                                                                                                                                gb_ov:*
          em_htgo_hum:*
em_htgo_inv:*
em_htgo_rod:*
em_htg_hum:*
em_htg_inv:*
em_htg_rod:*
                                                                                                                                                     em_pat:*
em_ph:*
em_pl:*
                                                                                                                                                                                                                                            em_ba:*
em_fun:*
em_hum:*
                                                                                       em_un:*
em_vi:*
                                                                                                                 em_sts:*
em_sy:*
                                                                                                                                                                                                       em_om:*
                                                                                                                                                                                                                                                                                  gb_sy:*
gb_vi:*
                                                                                                                                          em_ro:*
                                                                                                                                                                                           em_ov:*
                                                                                                                                                                                                                                  em_in:*
em_htg_other: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2944280
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

REFERENCE AUTHORS TITLE JOURNAL FEATURES SOURCE

1 (bases 1 to 3891) French,C.K., Schneider, P.A. and Yamamoto,K.K. Prostate cancer-specific marker Patent: US 6218523-A 1 17-APR-2001; Location/Qualifiers

BASE COUNT ORIGIN

1229 a

/organism="unknown" 671 c 788 g

1203 t

LOCUS
DEFINITION
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM

AR146667 3891 bp DNA Sequence 1 from patent US 63 AR146667

6218523.

PAT

08-AUG-2001

GI:15109856

Unknown.

Unclassified.

AR146667.1 . Unknown. RESULT AR146667

SUMMARIES

				•		
			O	ი ი	1	Result
	44444444444444444444444444444444444444	33333333333333333333333333333333333333	14 15 16 17 18 19 20 20 23	10 11 11 11 11 11 13	1 NO.	ult
	156.2 156.2 156.2 153.6 153.4 153.4	163.2 163.2 159.4 157.8 156.2 156.2 156.2 156.2	3 46. 2 3 4 4. 4 3 4 6. 2 2 8 1. 8 2 0 7. 8 2 0 7. 8 1 6 4. 4 1 1 6 3. 2 1 1 6 3. 2 1 1 6 3. 2	2/09.4 1651 1571.8 1305.4 1305.4 1124.6 1054.2 363.6 363.6	Score 3891 3830.2 2720.4 2720.4 2720.4	
						Query
	1836 1932 1959 2064 2187 2187 1620 1639 1506 4654	2795 1417 1277 1900 2551 1440 1212 1212 1212 1572 1572	2426 1293 1293 1293 148316 148316 163983 1163 1163 11676	159139 1671 170218 3992 2060 1576 1576 2950 2315	Length 3891 3910 171717 190550 192022	·
			322	2 10 10 9 9	, 20 0 0 0 C	1
ALIGNMENTS	AF336850 AF336853 AF336855 AF336855 AF336852 RNU20108 RNRNASYNV RNU26402 AF375461 RRP65 AB026810	AF25/304 ACU03125 LPSYNTTGM D63797 RNU20106 AB026804 AF336854 AF336856 AF336856 AF336858	AF000423 AB026808 AF375465 G24341 AL356483 AL139128 AB026806 MUSSYNB E11219 AB044144	AC091039 AF299075 AC068125 AC068125 MMU10355 RMU10355 RNU14398 RATRST BC004291 BC004291	AR146667 AR146667 AR037763 AC009266 AP001797 AC087507	
	AF336859 KALTUS NO AF336867 RATTUS NO AF336853 RATTUS NO AF336855 RATTUS NO AF336852 RATTUS NO U20108 RATTUS NO U20108 RATTUS NO U26402 RATTUS NO U26402 RATTUS NO AF375461 RATTUS NO X52772 R. TATTUS PÓ AB026810 Mus muscu	0.0000000	AF000423 Rattus no AB026808 Mus muscu AF375465 Rattus no G24341 human STS W AL1356483 Homo sapi AL139128 Homo sapi AL139128 Homo sapi AB026806 Mus muscu D37793 Mouse cDNA E11219 Mouse cDNA AB044144 Halocynth	sa n sa	Seque Homo Homo Homo	

TAATGAATAGAGAGATCATCAAGAGAAATGTTAGGAAGTCTTCAGGACGGGC	gtrantgatagagagatcatcaagagaaatgttaggagtctaaggacggggtgag 1 juurungattagatagagagatcatcaagagaaatgttaggaagtcttcaggacggggtgag 1		CCAAATCCAAGAATTGGCCTTGCACTTCACAAT	:tggatccagcttttgatgagacctttacattctatgggatac 	CCATATATCAAAATGACGATCCTCCCAGAGAAGAAGCATAAAGTGAAAACTAGAGTG 78	tcaatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctct 7	gaagctgggaactctcttcttctccttagaatacaacttcgagagaaaag 	aaagagtcagtttcccctgagagtttaaagtccagcacttcccttacttcagaagagaaa 600	aaacctggcagtccttctgatctggagaatgcaaccccgaagctctttttagaaggggaa 540	tcattgcatctggatcttgaaaagagagatctcaatggcaattttcccaaaaccaacc	aagaagtttggagcagatgataaaatgaagtaaagaataagccagctgtgccaaagaat 420	tacaagtttgtgcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaa 360	tetetetttgeatggatetgetgteagagaaaateateeaagtetaacaagaeteeteea 300	ttgatgaaatccccacagtggtggggatcttcagtgcatttggcctggtcttcacagtc 240	cagcacctcggacagaacacgcagtaaaaaatggctccgatcaccaccagccgggaagaa 180 [11-11	TOTTTECCTCCTCCTGTTCCAGGAGCTGGTGCCCTGGGCTCTGCGCTGTTGTTTCAG	ry Match 100.0%; Score 3891; DB 6; Length 3891; st Local Similarity 100.0%; Pred. No. 0; caps 100.5 ches 3891; Conservative 0; Mismatches 0; Indels 0; Gaps
NICAAAGGCIGAGIIWAGAACACIGIGGCIGAAAIAIAAIIITTITTCICCCCC	2041 tattutatcaaagggctgagttgagaacactgtggctgaaatataatuttttctcccccct 21	Qy 1981 aattttatcataagagtaactcagattcatttcaaaagggacagtgaacaagctgagaaat 2040	Qy 1921 tggttgtcctgcatataaaagtatctggtcatttcagtttggtttgtaattatttgatgc 1980	61 atccaaagatactaaaaaaatgtcctccagtttgtatttatt	QY 1801 ccttgccttgtgaaaatttatccatttatcttcaggttgggggaaatcaatttttcttta 1860	Qy 1741 atctcattggaacatgtcacaaaaagttaatgtgattaagatttaaaaacgaaaagtatg 1800	Qy 1681 ctaggaatagtcagacattttatgaatactgtgccagaatcccaaattataaatgtgaca 1740	Qy 1621 aagagitggataaattttcataagatattcaatatctccttcagattaccagtgatataa 1680	rag	Qy 1501 ttgcaagcttgggaaatcaagctacctttttgttgttgttgttgttgttgctagaaatggatt 156	1441 gagttggaacttaaaggtttttactaggcaaggagaaattttctttc	1381 taccccaggagacaaattgccaagtggcacgtgctctgtgatggttagcatcctagccgt 1	1321 tlagtotleggtgcagcagcagaaggaactggtggagagcactggaaagagatctgtgac 	1261 1261	1201 aatgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatata 1	Qy 1141 ctgtaccatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcacccc 1200	Qy 1081 gctcgacatctgcctaaatctgatgtgtccggacatttcagatccctatgtcaaagtgaac 1140	

```
DЪ
                                                           Qy
                                                                                        Qy
                                                                                                                    Qy
                                                                                                                                   Db
                                                                                                                                                 Ω
                                                                                                                                                                                             Оy
                                                                                                                                                                                                                          рь
                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                              g
VQ
                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                  Дδ
                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                 δĀ
                                                                         DЬ
                                                                                                     рь
                                                                                                                                                                  DP
QA
                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                    дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
       δõ
                     В
        3181
                                    3121
                                                                               3001
                                                                                            3001
                                                                                                          2941
                                                                                                                         2941
                                                                                                                                       2881
                                                                                                                                                                                                2761
                                                                                                                                                                                                             2761
                                                                                                                                                                                                                            2701
                                                                                                                                                                                                                                          2701
                                                                                                                                                                                                                                                        2641
                                                                                                                                                                                                                                                                      2641
                                                                                                                                                                                                                                                                                    2581
                                                                                                                                                                                                                                                                                                  2581
                                                                                                                                                                                                                                                                                                                 2521
                                                                                                                                                                                                                                                                                                                                            2461
                                                                                                                                                                                                                                                                                                                                                          2461
                                                                                                                                                                                                                                                                                                                                                                        2401
                                                                                                                                                                                                                                                                                                                                                                                      2401
                                                                                                                                                                                                                                                                                                                                                                                                    2341
                                                                                                                                                                                                                                                                                                                                                                                                                                2281
                                                                                                                                                                                                                                                                                                                                                                                                                                              2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2101
                      3121
                                                  3061
                                                                                                                                                                   2821
                                                                                                                                                                                 2821
                                                                                                                                                                                                                                                                                                                              2521
                                                                3061
                                                                                                                                                     2881
                                                                                                                                                                                                                                                                                                                                                                       CAACTTATACATGCTTTTTATGACTATGCCTAATGTAAAGAAAATGTATTACATTCTGTA
                                                                                                                                      catatyttcacycaaaatatycttagyctytcaaattaycacaacaaayaatytytttca
                                                                                                                                                                                                                                                                                                                                          gtacccagagtcggcatggccacctaagtcttcatttaatttattgtcccccagaaaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                       gtgcaattttcttataggaaataggtatagtgtgcaagtgtacttttaaggccatcgttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                           agtcaaatggccattttatgtatgtgcatttggtatcatgggccgtggaacagaatatat
                                                        agcatatttcccaatcattgtcttcattccactacaaagtcacctcacagcatcttgctc
                                                                                                                                                                                                                                                                                            ctatctttctaggctaatttgtcttgagctgttgtctatagagcagtttacagacttgt
                                                                                                                                                                                                                                                                                                                                                                                                    GTACCCAGAGTCGGCATGGCCACCTAAGTCTTCATTTAATTTATTGTCCCCCAGAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gattattcactgcctgtcacaagcctcagtgtggcctgagaaatccctatgtacctttgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACTCGGCATCTCTGTGAAAGCAACATGAAATGAACTGTAGTAGGTGTGTAGTTTGGGGA
                              cactcggcatctctgtgaaaagcaacatgaaatgaactgtagtaggtgtgtagttttgggga
                                                 AGCATATTTCCCAATCATTGTCTTCATTCCACTACAAAGTCACCTCACAGCATCTTGCTC
                                                                                                                                                                                                                                                        CTATCTTTTCTAGGCTAATTTGTCTTGAGCTGTTGTCTATAGAGCAGTTTACAGACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCAATTTTCTTATAGGAAATAGGTATAGTGCGAAGTGTACTTTTAAGGCCATCGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATTATTCACTGCCTGTCACAAGCCTCAGTGTGGCCTGAGAAATCCCTATGTACCTTTGT
                                    3180
                                                                                                                                      2940
                                                                                                                                                    2940
                                                                                                                                                                                                                                         2760
                                                                                                                                                                                                                                                       2700
                                                                                                                                                                                                                                                                      2700
                                                                                                                                                                                                                                                                                                  2640
                                                                                                                                                                                                                                                                                                                2580
                                                                                                                                                                                                                                                                                                                                            2520
                                                                                                                                                                                                                                                                                                                                                                        2460
                                                                                                                                                                                                                                                                                                                                                                                     2460
                                                                                                                                                                                                                                                                                                                                                                                                    2400
                                                                                                                                                                                                                                                                                                                                                                                                                 2400
                                                                                                                                                                                                                                                                                                                                                                                                                                              2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2160
                                                  3120
                                                                                                                        3000
                                                                                                                                                                   2880
                                                                                                                                                                                                                                                                                    2640
                                                                                                                                                                                                                                                                                                                             2580
                                                                                                                                                                                                                                                                                                                                                         2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                            2280
```

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                           VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                              RESULT
AB037763
                                                                                                                                                                                     DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                          Дβ
                                                                                                                                                                                                                                                                                                                                                                                                                           DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                        Locus
                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                    3781
                                                                                                                                                                                                                                                                                                    3781
                                                                                                                                                                                                                                                                                                                                       3721
                                                                                                                                                                                                                                                                                                                                                       3661
                                                                                                                                                                                                                                                                                                                                                                                                                                                             3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3181
                                                                                                                                                                                                                                                                                                                                                                                          3601
                                                                                                                                                                                                                                                                                                                                                                                                          3601
                                                                                                                                                                                                                                                                                                                                                                                        ggtgtgtgagacagtgtctgttcttttgtgccagctctgtatgatgtttgtaagaccatg
                                                                                                                                                                                                                                                                                                                     tggaacaatgaaaccaacaacaacatttttaaaatttaaaatggataatttgtaaatagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tgtctgattagccaatctcaccacccaaatggggaggtatacatgtttgaagaacgtgta
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTCAAATGGCCATTTTATGTATGTGCATTTGGTATCATGGGCCGTGGAACAGAATATAT
                                                            Nagase, T., Kikuno, R., Ishikawa, K.I. Prediction of the coding sequences XVI. The complete sequences of 150 code for large proteins in vitro DNA Res. 7 (1), 65-73 (2000) 20181126
2 (bases 1 to 3910)
Ohara,O., Nagase,T. and Kikuno,R.
Direct Submission
Submitted (31-JAN-2000) to the DDBJ/EMBL/GenBank
Ohara, Kazusa DNA Research Institute, Laboratory
1532-3 Yana, Kisarazu, Chiba 292-0812, Japan
(E-mail:cdnainfo@kazusa.or.jp, URL:http://www.kaz
                                                                                                                                 Homo sapiens
Eukaryota; Metazoa;
                                                                                                                                                                                     Homo sapiens
AB037763
                                                                                                                         Mammalia; Eutheria;
                                                                                                                                                    clone:fj00418.
                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                        AB037763
                                                                                                                 (sites)
                                                                                                                                                                                             3910
mRNA
                                                                                                                                                            brain
                                                                                                                                                                                              bp mRNA
for KIAA1342
                                                                                                                                                            CDNA
                                                                                                                         Chordata;
Primates;
                                                                                                          Ishikawa, K.I.,
                                                                                                                                                            ដ
                                                                                                                                                           mRNA,
                                                                                                                         Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                               protein,
                                                                                                                                                            clone_lib:pBluescriptII
                                                                                                of
                                                                                         new
                                                                                        Hirosawa, M. and Ohara
f unidentified human go
ew cDNA clones from bro
                                                                                                                                                                                              partial
                                                                                                                                                                                                        PRI
  .kazusa.or.jp/huge/
                                                                                                                                                                                               14-MAR-2000
cds.
                   databases.
of DNA Tec
                                                                                                                                                                                                                                                                   3891
                                                                                         human geneş.
from brain which
                                                                                                                                  Euteleostomi;
                                                                                                                                                              SK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3240
                                                                                                                                                                                                                                                                                                                                                       3720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3300
                                                                                                          ò
                                                                                                                                                                                                                                                                                     3840
                                                                                                                                                                                                                                                                                                     3840
                                                                                                                                                                                                                                                                                                                       3780
                                                                                                                                                                                                                                                                                                                                      3780
                                                                                                                                                                                                                                                                                                                                                                         3720
                                                                                                                                                                                                                                                                                                                                                                                          3660
                                                                                                                                                                                                                                                                                                                                                                                                          3660
                                                                                                                                                                                                                                                                                                                                                                                                                            3600
                                                                                                                                                                                                                                                                                                                                                                                                                                                              3540
                                                                                                                                                            plus
```

```
Q
                                                   дb
                                                                     Qy
                                                                                            Ъ
                                                                                                                 QΥ
                                                                                                                                       Вb
                                                                                                                                                            Qy
                                                                                                                                                                                   Дb
                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                     Ъ
                                                                                                                                                                                                                                                                                          γQ
                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                            Ър
                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 3860
                                                                                                                                                                                                                                                                                                                                                                                                                                                     st Local Similarity 99.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                457
                                                                                                                     421
                                                                                                                                           397
                                                                                                                                                               361
                                                      517
                                                                         481
                                                                                                                                                                                       337
                                                                                                                                                                                                           301
                                                                                                                                                                                                                                  277
                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                          217
                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                       157
                                                                                                                                                                                                                                                                                                                                           121
                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                           37
                                                                                                                                                                                                                                                                                                                                                                                                          aaacctggcagtccttctgatctggagaatgcaaccccgaagctctttttagaaggggaa
                                                                                                                                                         aagaagtttggagcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaat
                                                                                                                                                                                                   tacaagtttgtgcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaa
                                                                                                                                                                                                                                                                                                                                   cagcacctcggacagaacacgcagtaaaaaaatggctccgatcaccaccaccagccgggaagaa
                                                                                                                                             AAGAAGTTTGGAGCAGATGATAAAAATGAAGTAAAGAATAAGCCAGCTGTGCCAAAGAAT
                                                                                                                                                                                      TACAAGTTTGTGCATGTGCTTAAGGGAGTTGATATTTACCCTGAAAACCTAAATAGCAAA
                                                                                                                                                                                                                                             tctctctttgcatggatctgctgtcagagaaaatcatccaagtctaacaagactcctcca
                                                                                                                                                                                                                                                                          tttgattgaaatccccacagtggtggggatcttcagtgcatttggcttggtcttcacagtc
                                                                                                                                                                                                                                                                                                                                                                AAACCTGGCAGTCCTTCTGATCTGGAGAATGCAACCCCGAAGCTCTTTTTAGAAGGGGAA
                                                                                                                                                                                                                                 TCTCTCTTTGCATGGATCTGCTGTCAGAGAAAATCATCCAAGTCTAACAAGACTCCTCCA
                                                                                                                                                                                                                                                                                                                       CAGCACCTCGGACAGAACACGCAGTAAAAAATGGCTCCGATCACCACCAGCCGGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tel:+81-438-52-3913, Fax:+81-438-52-3914)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="KIAA1342"
//gene="KIAA1342"
//note="Start codon is not identified."
//note="Start codon is not identified."
//codon_start=1
//product="KIAA1342 protein"
//protein_id="BaA92580.1"
//protein_id="BaA92580.1"
//db_xref-"Gi:7243065"
//translation="KMAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCORKSS
KSWTPPXKFUVLKGVDIYPENLUSEKKKFGADDKNEVKNKPAVFKNSLHLDLEKRDL
NGNFPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLEF
KSWTPPXKFUVLKRAGLPANDEGSMTSDPYIKMTLPEKKHKVKTRVLRKTLDF
SLEVNFERRAFVNIKERAGLPANDEGSMTSDPYIKMTLFDEKKHKVKTRVLRKTLDF
APDETFTFYGIPYTOJDELALHETILSFDTRSRDDIIGEVLIPLEGSEKMLANR
EILKRNURKSSGRGELLISLCYQSTTWTLTVVVLKARHLPKSDVSGLSDFVVKVNLYH
AKKRISKKTHVKKCTDNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGGL
VLGAAAEGTGGEHWKEICDYPRRQIAKHVLCDG"
21 a 679 c 799 g 1211 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone="ff00418"
/clone_lib="pBluescriptII S
/tissue_type="brain"
184. .1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="<184.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            98.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "KIAA1342"
                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 3830.2; DB 9;
Pred. No. 0;
0; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SX
                                                                                                                                                                                                                                                                                                                                                                                                                                                    13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 3910;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                516
                                                                                                                      480
                                                                                                                                             456
                                                                                                                                                                420
                                                                                                                                                                                      396
                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                           276
                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                     216
                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                           96
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                 Дb
                                                               Вb
                                                                                 δÃ
                                                                                                          В
                                                                                                                              QΥ
                                                                                                                                                     рь
                                                                                                                                                                        20
                                                                                                                                                                                               DЪ
                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                    DЪ
                                                                                                                                                                                                                                                                                                        Ωy
                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ър
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γQ
                     1657
                                                                                                          1537
 1681
                                                                                                                                                     1477
                                                                                                                                                                                                1417
                                                                                                                                                                                                                     1381
                                                                                                                                                                                                                                            1357
                                                                                       1561
                                                                                                                               1501
                                                                                                                                                                           1441
                                                                                                                                                                                                                                                               1321
                                                                                                                                                                                                                                                                                      1297
                                                                                                                                                                                                                                                                                                          1261
                                                                                                                                                                                                                                                                                                                                1237
                                                                                                                                                                                                                                                                                                                                                     1201
                                                                                                                                                                                                                                                                                                                                                                            1177
                                                                                                                                                                                                                                                                                                                                                                                               1141
                                                                                                                                                                                                                                                                                                                                                                                                                      1117
                                                                                                                                                                                                                                                                                                                                                                                                                                          1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
ctaggaatagtcagacattttatgaatactgtgccagaatccccaaattataaatgtgaca
                     taccccaggagacaaattgccaagtggcacgtgctctgtgatggttagcatcctagccgt
                                                                                                                                                                                                                                          ttagtcttgggtgcagcagcagaaggaactggtggaaggcactggaaagagatctgtgactttagtctttgggtgcagcaggaagagagattggtgac
                                                                                                                                                                                                                                                                                              agtgttgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcag
                                                                                                                                                                                                                                                                                                                                ctgtaccatgccaaaaagagaatctccaagaagaatgatcatgtgaagaaatgcacccccctgtaccatgccaaaaaagagaatctccaagaagaagaatgactcatgtgaagaaatgcacccccctgtaccatgccaaaaaagagaatctccaagaagaagactcatgtgaagaaatgcaccccc
                                                                                                                                                                                                                                                                                                                                                                                                                                  gctcgacatctgcctaaatctgatgtgtccggactttcagatccctatgtcaaagtgaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atgttaatgaatagaagagatcatcaagagaaatgttaggaagtcttcaggacgggggtgag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtggtcaatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caagagaagctgggaactctcttcttctccttagaatacaacttgggagaaaagcattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTGTTGAATTTTTGGTTTTTGGATTCTGAAAGGGGGTCCCGAAATGAGGTAATCGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCGACATCTGCCTAAATCTGATGTGTCCGGACTTTCAGATCCCTATGTCAAAGTGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTACTGATCTCTCTGCTATCAGTCCACCACAAACACTCTAACTGTGGTTGTCTTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTTAATGAATAGAGAGATCATCAAGAGAAATGTTAGGAAGTCTTCAGGACGGGGTGAG
```

1680

1656

1620

1560

1440

1500

1380

1356

1416

1260

1236

1296

1200

1020 1056 1080 1116

936 960 996 876

816

1801 COCTGOCTIGGOANATTITCLARTINALIANALIANALIANALIANALIANALIANALIANAL	
B 0 B 0 B 0 B 0 B 0 B 0 B 0 B 0 B 0 B 0	ор Оу
2881	2797 TCTTAGAGAAGTATGAGTGGAACTTGAGTACAGTTGAATTATTAAATATGCAAGTTAGAA 2856 2821 attaagtctactgaaaaatttacattttgagtcaggttttgtgtcagtactttagcagtt 2880

```
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                           Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, M.,
Baker, J., Baldwin, J., Barna, N., Beckerly, R., Benn, J., Brown, A.,
Castle, A., Cerny, J., Colangelo, M., Collins, S., Collymore, A.,
Cooke, P., DeArellano, K., Depayre, E., Devon, K., Dewar, K.,
Donelan, L., Doyle, M., Ferreira, P., FitzHugh, M., Forrest, C.,
Funke, R., Gage, D., Galagan, J., Gardyna, S., Gilbert, D., Grant, G.,
Hagos, B., Heaford, A., Horton, L., Howland, J.C., Jones, C., Kann, L.,
Karatas, A., Lehoczky, J., Lieu, C., Locke, K., Macdonald, P.,
Marguis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J.,
Meldrim, J., Molla, M., Morris, M., McKernan, K., McLaughlin, J.,
Naylor, J., Niloff, M., O'Connor, T., O'Donnell, P., Pavlin, B.,
Peterson, K., Pollara, V., Riley, R., Roberts, D., Roy, A., Severy, P.,
Stange-Thomann, N., Stojanovic, N., Stone, C., Subramanian, A.,
Tesfaye, S., Torruella-Miller, I., Vassillev, H., Vo, A., Wagner, A.,
Wheeler, J., Wu, X., Wyman, D., Ye, W. J. and Zody, M.
Wheeler, J., Wu, X., Wyman, D., Ye, W. J. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACU09266 171717 bp DNA
Homo sapiens chromosome 18 ci
SEQUENCE, 4 unordered pieces.
AC009266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mammalia; Eutheria; Primate:
1 (bases 1 to 171717)
Birren, B., Linton, L., Nusba:
Homo sapiens chromosome 18,
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACO09266.4 GI:13112247
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 171717)
39315: contig of 39315 bp in length
39316 39415: gap of 100 bp
39416 40720: contig of 1305 bp in length
40721 40820: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nusbaum, C. and Lander, E. me 18, clone RP11-481E14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A HTG
clone RP11-481E14 map
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-MAY-2001
18, WORKING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Anderson, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DRAFT
                                                                                                                                                                                              Ър
                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                 ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
```

```
Db 118383 AAATTTTCTTTCTTTCTATATTGGATTGCAAGCTTGGGAAATCAAGCTACCTTTTTGTTG 118324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Db 118623 TCCTTGTGAGGGCCTTGAAGATATAAGTGTTTGAATTTTTTGGTTTTGGATTCTGAAAGGGG 118564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db 118683 GACTCATGTGAAGAAATGCACCCCCAATGCAGTGTTCAATGAGCTGTTTGTCTTTGATAT 118624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db 118743 TGCAGATCCCTATGTCAAAGTGAACCTGTACCATGCCAAAAAGAGAATCTCCCAAGAAGAA 118684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 2749; Conserv
                                                                     118203 CTCCTTCAGATTACCAGTGATATAACTAGGAATAGTCAGACATTTTATGAATACTGTGCC
                                                                                                                                                             118263 TTATGATAATTTCCCTATTTATTAGAAGAGTTGGATAAATTTTCATAAGATATTCAATAT 118204
                                                                                                                                                                                                                                                                                                                                                                                                                                              118443 CTGTGATGGTTAGCATCCTAGCCGTGAGTTGGAACTTAAAGGTTTTTACTAGGCAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118503 AGAGCACTGGAAAGATCTGTGACTACCCCAGGAGAAAATTGCCAAGTGGCACGTGCT 118444
                                                                                                                                                                                                                                                                                                                                                                               1476 aaattttettttetttetatattggattgeaagettgggaaateaagetaeetttttgttg 1535
                                                                                                                                                                                      1596 ttatgataatttecetatttattagaagagttggataaattttcataagatattcaatat 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1176 gactcatgtgaagaaatgcacccccaatgcagtgttcaatgagctgtttgtctttgatat 1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1116 ttcagatccctatgtcaaagtgaacctgtaccatgccaaaaagagaatctccaagaagaa 1175
1716 agaatcccaaattataaatgtgacaatctccattggaacatgtcacaaaaagttaatgtga 1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                ctccttcagattaccagtgatataactaggaatagtcagacattttatgaatactgtgcc
                                                                                                                                                                                                                                                   ctgtgatggttagcatcctagccgtgagttggaacttaaaggttttttactaggcaaggag 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agagcactggaaagagatctgtgactaccccaggagacaaattgccaagtggcacgtgct 1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tccttgtgagggccttgaagatataagtgttgaatttttggtttttggattctgaaagggg 1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40821 169274: contig of 128454 bp in length 169275 169374: gap of 100 bp in length. 169375 171717: contig of 2343 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vector_side:right"
1 30748 c 29866 g 55849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
40821..169274
/note="assembly_fragment"
169375..171717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              vector_side:left"
39416. .40720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="assembly_fragment clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment
clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="RP11-481E14"
/clone_lib="RPCI-11 Human Male
l. .39315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /chromosome="18"
/map="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            69.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 2720.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 171717;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2; Gaps
                                                                                                                 1715
                                                                     118144
                                                                                                                                                                                                                                                                                                                                                                                                                                              118384
```

,	2855 117004	6 gaattattaaatatgcaagttagaaattaagtctactgaaaaatttacattttgagtcag 	279 11706	ad VQ
	2795 117064	6 gagagtaatgtcactatatttgagttcttagagaagtatgagtggaacttgagtacagtt 	273 11712	Дy
-	2735 117124	6 ttoattoagaacotgttagattaaagotgoacoctgtgattatttgaaaagaattagott 	267 11718	QQ QQ
	2675 117184	tctatagagcagtttacagacttgtgtcttgtatcattttccagtgccagggttctgaaa 	y 2616 b 117243	ס ס
	2615 117244	ttagcacaacaagaatgtgtttcactatctttctaggctaatttgtcttgagctgttg	y 2556 b 117303	Dp Qd
-	2555 117304	5 tcaagagcaattctaatataatttacatatgttcacgcaaaatatgcttaggctgtcaaa 	y 2496 b 117363	ДЪ
*	2495 117364	5 tacattgccagataaaaagtgttacttaaccaacaaacaa	y 2436 b 117423	р ю
	2435 117424	ttaatttattgtcccccagaaaagattaagatgctacttgaaaagactgtgaagattttt 	y 2376 b 117483	Ωу
	2375 117484	6 aagtgtacttttaaggccatcgtttgtacccagagtcggcatggccacctaagtcttcat	231 11754	DP CA
	2315 117544	S acttcaactagaaatccagttagaagtgcaattttcttataggaaataggtatagtgtgc 	y 2256 b 117603	dq VQ
	2255 117604	5 ctgagaaatccctatgtacctttgtgaaattgttgaattagttag	y 2196 b 117663	DP GA
	2195 117664	i acctcacataagaaccatggccttggattattcactgcctgtcacaagcctcagtgtggc 	iy 2136 b 117723	dd 60
	2135 117724	6 ctgaaatataatttttctcccccctaaggttacatgtgagtcaaaattttgtaaaatatata 	y 2076 b 117783	DP QA
	2075 117784	aaggacagtgaacaagctgagaaattattttatcaaagggctgagttgagaacactgtgg	y 2016 b 117843	Dp Qy
	2015 117844	agtttggtttgtaattatttgatgcaattttatcataagagtaactcagattcatttcaa 	y 1956 b 117903	g o
	1955 117904	atttattaattotgtcatgtgcaaatggttgtcctgcatataaaagtatctggtcatttc	y 1896 b 117963	dd Sy
	1895 117964	gttgggggaaatcaatttttctttaatccaaagatactaaaaaaaa	у 1836 b 118023	<u>D</u> 0
	1835 118024	ttaagatttaaaaacgaaaagtatgccttgccttgtgaaaatttatccatttatcttcag)y 1776 b 118083	<u>п</u> ю
	118084	3 AGAATCCCAAATTATAAATGTGACAATCTCATTGGAACATGTCACAAAAAGTTAATGTGA	11814	뮍

	aa 3876 AA 115983	3875	Qy Db	
3874 115985	ctctgtatgatgtttgtaagaccatgtttgtaagacatgaataaattgctgcttttgccc 	3815	Db Qy	
3814 116045	aatagaagtgttttggaaggaagcatggtgtgtgagacagtgtctgttcttttgtgccag	3755	Qy Db	
3754 116105	ggtatacatgtttgaagaac-gtgtaactcggtaattgatttgttctgatgttgtaactc	3696	Qy Db	
3695 116165	gtattaaacatgtaaattaattgtttgtctgattagccaatctcaccacccaaatgggga 	3636 116224	Db Qy	
3635 116225	ttttagaatgtattacaatatcaatgtgaatatcttgaatcctgttacaaatcctgcact	3576 116284	Qy Db	
3575 116285	gaattgaaacaggcagggagatcttaatacctaatttcatcatttctgcaaaatgtactg	3516 116343	Dp OA	
3515 116344	gaaaagttgagtaaaactatttgcaactggttttcagaaaagagaaaagaaacaacaaag 	3456 116403	DP DA	
3455 116404	ttaaaatggataatttgtaaatagtttttagcttttaaaatttaaagtgtttttgagtgt 	3396 116463	Qy Db	
3395 116464	cgaggccgattttttttttttaacatggaacaatgaaaccaacaacaacaatttttaaaa 	3336 116523	Db Qy	
3335 116524	aagtattcttcacggcagccagaagttaatggtggtagcagctgaggtatggttgttgga 	3276 116583	Db Qy	
3275 116584	tcatgggccgtggaacagaatatatgttggacctctgaaaagttgtaaggggccaaatct 	3216 116643	Qy Db	
3215 116644	ctgtagttaggtgtgtagtttggggaagtcaaatggccattttatgtatg	3156 116703	Qy db	
3155 116704	aaagtcacctcacagcatcttgctccactcggcatctctgtgaaagcaacatgaaatgaa	3096	Qy dd	
3095 116764	tttaaaatgactttgggattaaaaaagcatatttcccaatcattgtcttcattccactac 	3036 116823	4d 40	
3035 116824	taaagaaaatgtattacattctgtatgtacaaagattaaaaatcaacctcttttttgtgc 	2976 116883	Db Qy	
2975 116884	ttotatgaaaaatgcattttccaaacaacttatacatgctttttatgactatgcctaatg	2916 116943	DP QA	
2915 116944	gttttgtgtcagtactttagcagtttttgagaatgtgtttgatatcacagtgtttgtaaa 	2856 117003	Db dd	

```
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
AP001797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

CE 1 (bases 1 to 190550)

RS Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Seog,P.,
RS Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Seog,P.,
Pujiyama,A., Yada,T., Totckii,Y., Watanabe,H. and Sakaki,Y.
Homo sapiens 190,550 genomic DNA of 18912

AL Published Only in DataBase (2000) In press

CE 2 (bases 1 to 190550)

RS Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Seog,P.,
Fujiyama,A., Yada,T., Totcki,Y., Watanabe,H. and Sakaki,Y.
Direct Submission

AL Submitted (11-APR-2000) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC);
Kitasato Univ., 1-15-1 Kitasato, Sagamihara, Kanagawa 228-8555,
Japan (E-mail:hattori@gc.riken.go.jp,
On May 30, 2000 this sequence version replaced gi:7592912.

Center code: RIKEN
Genome Center

Center: RIKEN Genomic Sciences Center(GSC)
Web site: http://mp.gsc.riken.go.jp,
Contact: hattori@gc.riken.go.jp,
Contact: hattori@gc.riken.go.jp,
Contact: hattori@gc.riken.go.jp,
Sequencing vector: PCR products; 100% of reads
Chemistry: Dye-terminator ET-amersham; 100% of reads
Consensus quality: 178641 bases at least Q30
Consensus quality: 186791 bases at least Q30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOTE: This is a 'working draft' sequence. It currently consists of 27 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HTG: HTGS_PHASE1; HTGS_DRAFT.
Homo sapiens DNA, clone:RP11-748I20.
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AP001797.2 GI:8117469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality coverage: 4.84x in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EQUENCE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           190550 bp
      16718 contig of 45607 contig of 59752 contig of 75894 contig of 97062 contig of 106435 contig of 114800 contig of 122422 contig of 122422 contig of 152507 contig of 155673 contig of 160475 cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      90550 bp DNA chromosome 18 clone Diec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pieces
116718 bp in 115058 bp in 115058 bp in 116042 bp in 11604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HTG 30-MAY-2000
RP11-748I20 map 18q12, WORKING
             length
                                                                    FEATURES
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    174870 178072 contig of 3203 bp in length
178173 180351 contig of 2179 bp in length
180482 181295 contig of 3157 bp in length
181396 184552 contig of 3157 bp in length
181396 184552 contig of 3157 bp in length
186483 186282 contig of 1630 bp in length
186283 188196 contig of 1090 bp in length
186287 189386 contig of 1090 bp in length
189487 189386 contig of 1094 bp in length
189487 190550 contig of 1094 bp in length
189487 190550 contig of 1064 bp in length
180487 180587 contig of 1064 bp in length
180587 180587 contig of 1064 bp in length
1805887 1805887 contig of 1064 bp in length
1805887 180587 contig of 1064 bp in length
1805887 1805887 contig of 1064 bp in length
1805887 contig of 1064 bp in length
1805887 pin le
                                                                                                                                               106436 10535: Qap of 100 bp 1 length 114901 121600: contig of 8700 bp in length 121601 1221701: gap of 100 bp 129523: gap of 129422: contig of 7772 bp in length 129421 12952: gap of 100 bp 129523: contig of 5772 bp in length 145366 145465: gap of 100 bp 125774 bp 1755774 length 155674: contig of 5772 bp in length 16568: contig of 5772 bp in length 16568: contig of 100 bp 1 length 16578: gap of 100 bp 1 length 16578: contig of 5105 bp in length 174770 174869: gap of 100 bp 1 length 18035: contig of 5105 bp in length 18035: gap of 100 bp 1 length 18035: contig of 5105 bp in length 18035: contig of 5105 bp in length 18035: contig of 5105 bp in length 18035: gap of 100 bp in length 18035: contig of 5105 bp in length 18035: contig of 5105 bp in length 18037; 18036: contig of 5105 bp in 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16719 16818: gap of 16718 bp in length
16819 30449: contig of 13631 bp in length
30450 305499: gap of 100 bp
45608 45707: gap of 100 bp
45708 59752: contig of 14045 bp in length
59753 59852: gap of 100 bp
59853 75894: contig of 16042 bp in length
75895 75994: gap of 100 bp
75995 87034: contig of 16042 bp in length
75995 87034: contig of 100 bp
75995 75994: gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97063 97162: gap of 1
97163 106435: contig of
106436 106535: gap of
106536 114800: contig of
                                                                                  Location/Qualifiers
1. .190550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bp in length
```

```
В
                     δÃ
                                            Вb
                                                                   Q
                                                                                          В
                                                                                                                 δÃ
                                                                                                                                        Query Match 69.9%;
Best Local Similarity 99.5%;
Matches 2749; Conservative
  13218
                                                                                             13098
                                               13158
                        1236
                                                                                                                  1116
                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_teature
                                                                                         TCCTTGTGAGGGCCTTGAAGATATAAGTGTTGAATTTTTGGTTTTGGATTCTGAAAGGGG
             tccttgtgagggccttgaagatataagtgttgaatttttggttttggattctgaaagggg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_fragment"
97163 .106435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment clone_end:SP6 vector_side:right"
121701. .139422
/note="assembly_fragment"
129523. .138872
/note="assembly_fragment"
138973. .145365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment"
87135. .97062
                                                                                                                                                                                                                                                                                                                            /note="8
178173.
                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
174870. .178072
                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment"
165781. .169630
/note="assembly_fragment"
169731_ .174769
                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_fragment"
155774. .160475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
145466. .151207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
114901. .121600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
106536. .114800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
59853. .75894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
45708. .59752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606"
/chromosome="18"
/map="18q12"
                                                                                                                                                                                                                                 /note="assembly_fragment"
186383. .188196
                                                                                                                                                                                                                                                        /note="assembly_fragment clone_end:T7 vector_side:right"
181396. .184552
/note="assembly_fragment"
184653. .186282
                                                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_fragment"
160576. .165680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
151308. .155673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_fragment"
75995._.87034
                                                                                                                                                                                     /note="assembly_fragment"
189487. .190550
                                                                                                                                                                                                            /note="assembly_fragment"
188297. .189386
                                                                                                                                                                                                                                                                                                     /note="assembly
180452. .181295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment"
30550. .45607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment"
16819. .30449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="RP11-748I20"
                                                                                                                                                                                                                                                                                                                                      "assembly_fragment"
                                                                                                                                                                                                                                                                                                                          .18035
                                                                                                                                       ; Score 2720.4;
; Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                               .y_fragment"
                                                                                                                                                               DB 2;
                                                                                                                                        11;
                                                                                                                                        Indels
                                                                                                                                                               Length
                                                                                                                                                               190550;
                                                                                                                                        ?
                                                                                                                                       Gaps
                      1295
  13277
                                             13217
                                                                                                                                        2
                               δÃ
                                                        망
                                                                            Qy
                                                                                                      DЪ
                                                                                                                          Ωy
                                                                                                                                                  В
                                                                                                                                                                       Q
                                                                                                                                                                                                В
                                                                                                                                                                                                                    Ω
                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                  멍
                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
            g
                                                                                                                                                                                                                                                                                                                                                                                    13818
                                                                                                                                                                                                                                                                                          13938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13338
            14298
                                                                                                                                                   14118
                                                                                                                                                                                                                                                                                                                                       13878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13638
                                                                                                                                                                                                 14058
                                                                                                                                                                                                                                               13998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1476
                                                                                                                                                                                                                        2076
                                                                                                                                                                                                                                                                                                                                                             1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1296
                                                                                                                            2196
                                                                                                                                                                          2136
                                                                                                                                                                                                                                                                    2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1716
                                   2316
          acctcacataagaaccatggccttggattattcactgcctgtcacaagcctcagtgtggc
                                                                                                                                                                                                                                                                                        ttaagatttaaaaacgaaaagtatgccttgccttgtgaaaatttatccatttatcttcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            abattttctttctttctatattggattgcaagcttgggaaatcaagctaccttttgttg 1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctgtgatggttagcatcctagccgtgagttggaacttaaaggtttttactaggcaaggag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      agagcactggaaagagatctgtgactaccccaggagacaaattgccaagtggcacgtgct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctgaaatataatttttctcccccctaaggttacatgtgagtcaaaattttgtaaaatata
                                                                                                                                                                                                                                                        aaggacagtgaacaagctgagaaattattttatcaaagggctgagttgagaacactgtgg
                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAAGATTTAAAAAACGAAAAGTATGCCTTGCCTTGTGAAAATTTATCCATTTATCTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGTGATGGTTAGCATCCTAGCCGTGAGTTGGAACTTAAAGGTTTTTACTAGGCAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAGCACTGGAAAGAGATCTGTGACTACCCCAGGAGACAAATTGCCAAGTGGCACGTGCT
                                                                                                                                                   ACCTCACATAAGAACCATGGCCTTGGATTATTCACTGCCTGTCACAAGCCTCAGTGTGGC
                                                                                                                                                                                                 CTGAAATATAATTTTCTCCCCCCTAAGGTTACATGTGAGTCAAAATTTTGTAAAATATA
                                                                                                                                                                                                                                             AAGGACAGTGAACAAGCTGAGAAATTATTTTATCAAAGGGCTGAGTTGAGAACACTGTGG
```

13817

1595

13517

1475

13457

1415

13397

2315

14237 2255 2195 14117

14177

2375 14297 2075 13997 13937 1955 13877

2015

14057

```
Ωy
                        B
                              QΥ
                                       рь
                                               QΥ
                                                       Ъ
                                                              Ş
                                                                             γ
                                                                                             ρy
        B
                                                                       В
                                                                                      Вр
                                                                                                      В
                                                                                                            QΥ
                                                                                                                     В
                                                                                                                            δÃ
                                                                                                                                    рЬ
                                                                                                                                           γ
                                                                                                                                                     밁
                                                                                                                                                           Qy
                                                                                                                                                                    В
                                                                                                                                                                           20
                                                                                                                                                                                   Вр
                                                                                                                                                                                          δÃ
                                                                                                                                                                                                  B
                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                  д
                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                  DЪ
                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                 В
                                                        15198
                                                                                      15078
                                                                                                      15018
                                                                                                                      14958
                                                                       15138
                                                                                                                                     14898
                                                                                                                                                     14838
                       aagtattcttcacggcagccagaagttaatggtggtagcagctgaggtatggttgttgga
                                                       ttctatgaaaaatgcattttccaaacaactatacatgctttttatgactatgctaatg
                                                                                                                                                     gaaaagttgagtaaaactatttgcaactggttttcagaaaagagaaaagaaacaacaaag 3515
                                       tcaagagcaattctaatataatttacatatgttcaggcaaaatatgcttaggctsgcaaa
                                                                                                                                                                                                                                                                  Lacattgccagataaaaagtgttacttaaccaaccaaacatgtaagactacaaaatgt
                                                                                                                                                                                                                                                                                  3035
                                       15317
                                                       15257
                                                                                                             3095
                                                                                                                                     14957
                                                                                                                                                                           2855
                                                                                                                                                                                    14777
                                                                                                                                                                                           2795
                                                                                                                                                                                                   14717
                                                                                                                                                                                                           2735
                                                                                                                                                                                                                          2675
                                                                                                                                                                                                                                          2615
                                                                                                                                                                                                                                                                          2495
                                                                                                                                                                                                                                                                                         2435
        15437
                                                                                      15137
                                                                                                                                                             2915
                                                                                                                                                                                                                                   14597
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
AC087507
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Manmalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

CE 1 (bases 1 to 19202)

RES Birren, B., Linton, L., Nusbaum, C., and Lander, E.

Homo sapiens chromosome 18, Clone RP11-748120

AL Unpublished

CE 2 (bases 1 to 192022)

Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S., Barnen, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S., Callymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Collymore, A., Cooke, P., DeArellano, K., Colangelo, M., Collins, S., Collymore, S., Faro, S., Faro, S., Ferrelra, P., FitzHugh, M., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Graham, J., J., Candar-Pierre, N., Jones, C., MacChan, L., MacGonald, P., Jones, C., MacChan, C., MacChanle, M., McBwan, P., McKernan, K., McPhaeters, R., Meldrin, J., Meneus, L., Mihova, T., Menga, V., McPhaeters, R., Meldrin, J., Meneus, L., Mihova, T., Menga, V., McPhaeters, R., Meldrin, J., Meneus, L., Mihova, T., Menga, V., McPhaeters, R., Schauer, S., Schupback, R., Seaman, S., Severy, P., Phunkhang, P., Pierre, N., Pollara, V., Raymond, C., Retta, R., Phunkhang, P., Pierre, N., Pollara, V., Roynond, C., Retta, R., Roya, P., Roya, P., Royanod, C., Retta, R., Subramanian, A., Talamas, J., Tesfaye, S., Theodore, J., Travers, M., Tavis, M., Travis, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctctgtatgatgtttgtaagacoatgtttgtaagacoatgataataatttgctgcttttgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaattgaaacaggcagggagatcttaatacctaatttcatcatttctgcaaaatgtactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      astaqaagigittiggaaggaaggatggigigiggagaagigittigtigigcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTATACATGTTTGAAGAACTGTGTAACTCAGTAATTGATTTGTTCTGATGTTGTAACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggtatacatgtttgaagaac-gtgtaactcggtaattgatttgttctgatgttgtaactc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTATTAAACATGTAAATTAATTGTTTGTCTGATTAGCCAATCTCACCACCCAAATGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gtattaaacatgtaaattaattgtttgtctgattagccaatctcaccaccacaaatgggga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTAGAATGTATTACAATATCAATGTGAATATCTTGAATCCTGTTACAAATCCTGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAATTGAAACAGGCAGGGAGATCTTAATACCTAATTTCATCATTTCTG-AAAATGTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AC087507 192022 bp DNA HTG 09-WAY-2001
Homo sapiens chromosome 18 clone RP11-748120 map 18, WORKING
SEQUENCE, 12 unordered pieces.
AC087507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC087507.3 GI:13940683
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DRAFT
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                    misc_feature
                                                          misc_feature
                                                                                              misc_feature
                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    On May 4, 2001 this sequence very RepeatMasker: All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: This is a 'working draft' sequence. It currently consists of 12 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequencing vector: Plasmid; n/a; 100% of reads Chemistry: Dye-terminator Big Dye; 100% of read Assembly program: Phrap; version 0.960731 Consensus quality: 186183 bases at least Q40 Consensus quality: 189224 bases at least Q30 Consensus quality: 189373 bases at least Q20 Consensus quality: 190373 bases at least Q20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Insert size: 194000; agarose-fp Insert size: 190922; sum-of-contigs Quality coverage: 6.1 in Q20 bases; Quality coverage: 6.2 in Q20 bases;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Center clone name: 748_I_20
------ Summary Statistics
Sequencing vector: Plasmid; n/a;
                                                                                                                                                                                                                                                                                                                                                     86714
125448
125548
125507
157507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Center project name:
                                                                                                                                                                                                                                                                                                                                                                                                     43546 62579; contig of 19034 bp in length 62580 62679; gap of 100 bp 62680 86613; contig of 23934 bp in length 86614 86713; gap of 100 bp 86714 125447; contig of 38734 bp in length 105448 125547; gap of 100 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center: Whitehead Institute/ MIT Center for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----- Project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28742 4344
43446 43545:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6806
6906
8181
8281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9284 9383:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 6805: contig of 6805 bp in length
806 6905; gap of 100 bp
906 8180: contig of 1275 bp in length
181 8280: gap of 100 bp
1281 9283: contig of 1003 bp in length
284 9383: gap of 100 bp
1168: contig of 1785 bp in length
169 11268: gap of 100 bp
13778: contig of 2510 bp in length
779 13878: gap of 100 bp
879 28641: contig of 14763 bp in length
879 28641: contig of 14763 bp in length
879 28641: contig of 14764 bp in length
879 28741: gap of 100 bp
879 28741: gap of 100 bp
                /note="assembly_fragment"
9384. 11168
                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2001 this sequence version replaced gi:12957877
                                                                                                               vector_side:left"
                                                                                                                                     clone_end:SP6
/note="assembly_fragment"
                                                                                                                                                     /note="assembly_fragment
                                                                                                                                                                                           /clone_lib="RPCI-11 Human
                                                                          /note="assembly_fragment"
                                                                                                                                                                                                                /clone="RP11-748I20"
                                                                                                                                                                                                                                  /map="18"
                                                                                                                                                                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                     157606: gap of 
192022: cont

    Genome Center

                                                                                                                                                                                                                                                                                                                                                                                     157506: contig of 31959 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               741: gap of 100 bp
43445: contig of 14704 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100 bp
62579; contig of 19034 bp in length
                                                                                                .8180
                                                                                                                                                                                                                                                                                                                                                     contig of 34416
                                                                                                                                                                                             Male
                                                                                                                                                                                                                                                                                                                                                     bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   agarose-fp
                                                                                                                                                                                                                                                                                                                                                                                           length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genome Research
                                    δõ
                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
  Db · 187869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches 2749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                              187629
                                                                                                                                                                                                                                                                                                                                                                                           187569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   187449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               187389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            187329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     187269
                                                                                                                                                                                                                                  187689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187509
                                      1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1176
                                                                                                                                                                                                                                                                                                                                                     1536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         vector_side:right"
. 34828 c 35147 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
157607...192022
/note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
28742. .43445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     86714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment"
13879. .28641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'note="assembly_fragment'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69.9%;
99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .86613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .13778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .125447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .157506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

```
60815 t
1101
others
```

Db 187209 TGCAGATCCCTATGTCAAAGTGAACCTGTACCATGCCAAAAAAGAGAATCTCCAAGAAGAA 187268 ttaagatttaaaaacgaaaagtatgccttgccttgtgaaaatttatccatttatcttcag ctccttcagattaccagtgatataactaggaatagtcagacattttatgaatactgtgcc ttatgataatttccctatttattagaagagttggataaattttcataagatattcaatat ttgttgttgttgctagaaatggattgaattagtagaccagaaagtaacttcaaatgtgta aaattttctttctttctatattggattgcaagcttgggaaatcaagctacctttttgttg ctgtgatggttagcatcctagccgtgagttggaacttaaaggtttttactaggcaaggag agagcactggaaagagatctgtgactaccccaggagacaaattgccaagtggcacgtgct 1415 TTGTTGTTGCTAGAAATGGATTGAATTAGTAGACCAGAAAGTAACTTCAAATGTGTA AAATTTTCTTTCTTTCTATATTGGATTGCAAGCTTGGGAAATCAAGCTACCTTTTTGTTG CTGTGATGGTTAGCATCCTAGCCGTGAGTTGGAACTTAAAGGTTTTTACTAGGCAAGGAG AGAGCACTGGAAAGAGATCTGTGACTACCCCAGGAGACAAATTGCCAAGTGGCACGTGCT GTCCCGAAATGAGGTAATCGGGCAGTTAGTCTTGGGTGCAGCAGCAGAAGGAACTGGTGG gtcccgaaatgaggtaatcgggcagttagtcttgggtgcagcagcagaaggaactggtgg 1355 CTCCTTCAGATTACCAGTGATATAACTAGGAATAGTCAGACATTTTATGAATACTGTGCC TTATGATAATTTCCCTATTTATTAGAAGAGTTGGATAAATTTTCATAAGATATTCAATAT Score 2720.4; Pred. No. 0; DB 11; 2; Indels Length 192022; 2; Gaps 1715 1475 1835 1595 1535 1655 187448 187388 187328 187928 187868 187688 187628 187568 187508 187808 187748

	aaa 2915 AAA 189008	6 gttttgtgtcagtactttagcagtttttgagaatgtgtttgatatcacagtgtttgt 	Oy 2850 Db 18894
-	ag 2855 AG 188948	96 gaattattaaatatgcaagttagaaattaagtctactgaaaaatttacattttgagtc 	Qy 2791 Db 188881
	tt 2795 TT 188888	36 gagagtaatgtcactatatttgagttcttagagaagtatgagtggaacttgagtacag 	Qy 273
	tt 2735 TT 188828	76 ttcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaagaattagc 	Qy 2671 Db 188761
	aa 2675 AA 188768	16 totatagagoagittacagaottgigtottgiatoattitocagigocagggitotga 	
	rg 188708	56 ttagcacaacaaagaatgtgtttcactatcttttctaggctaatttgtcttgagctgt 	
	AA 188648	96 tcaagagcaattctaatataatttacatatgttcacgcaaaatatgcttaggctgtca 	
	gt 2495 GT 188588	36 tacattgccagataaaaagtgttacttaaccaacaaacaa	
	TT 188528	76 ttaatttattgtcccccagaaaagattaagatgctacttgaaaagactgtgaagattt 	
	at 2375 AT 188468	16 aagtgtacttttaaggccatcgtttgtacccagagtcggcatggccacctaagtcttc 	Qy 231 Db 18840
	gc 2315 GC 188408	56 acttoaactagaaatccagttagaagtgcaattttcttataggaaataggtatagtgt 	
	.aa 2255 AA 188348	96 ctgagaaatccctatgtacctttgtgaaattgttgaattagttag	
	gc 2195 CC 188288	36 acctcacataagaaccatggccttggattattcactgcctgtcacaagcctcagtgtg 	
	ta 2135 TA 188228	76 ctgaaatataatttttctcccccctaaggttacatgtgagtcaaaattttgtaaaata 	
	.gg 2075 GG 188168	16 aaggacagtgaacaagctgagaaattattttatcaaagggctgagttgagaacactgt 	Qy 201 рь 18810
	aa 2015 AA 188108	56 agtttggtttgtaattatttgatgcaattttatcattaggagtaactcagattcatttc 	
	tc 1955 C 188048	96 atttattaattotgtoatgtgcaaatggttgtcotgcatataaaagtatotggtcatt 	
	gt 1895 GT 187988	36 gttgggggaaatcaatttttctttaatccaaagatactaaaaaaatgtcctccagttt 	

y Qy	Db 1	0	Db 1	Qy	Db 1	Qy	Db 1	Qy	pb 1	Qy	Db 1	Qy	Db 1	Qy	Db 1	Qy	Db 1	Qy	Db 1	Qy	Db 1	Qy	Db 1	Qy	Db :	Qy	Db 1	Qy	Db 1	Qy	Db 1	Qy
3875	.8990	3815	189848	3755	189788	3696	189728	3636	189668	3576	189609	3516	189549	3456	189489	3396	189429	3336	œ	3276	189309	3216	189249	3156	189189	3096	189129	3036	189069	2976	600681	2916
aa 3876		totatataatatitataaaaccatatttataaaacataaataa	AATAGAAGTGTTTTGGAAGGAAGCATGGTGTGTGTGAGACAGTGTCTGTTCTTTTGTGCCAG 1	tagaagtgttttggaaggaagcatggtgtgtgagacagtgtctgttcttttgtgcca	GGTATACATGTTTGAAGAACTGTGTAACTCAGTAATTGATTTGTTCTGATGTTGTAACTC	gtatacatgtttgaagaac-gtgtaactcggtaattgatttgttctgatgttgtaac	GTATTAAACATGTAAATTAATTGTTTGTCTGATTAGCCAATCTCACCACCCAAATGGGGA 1	tattaaacatgtaaattaattgtttgtctgattagccaatctcaccacccaaatggg	TTTTAGAATGTATTACAATATCAATGTGAATATCTTGAATCCTGTTACAAATCCTGCACT	tttagaatgtattacaatatcaatgtgaatatcttgaatcctgttacaaatcctgca	GAAACAGGCAGGGAATCTTAATACCTAATTTCATCATTTCTG-AAAA	aattgaaacaggcagggagatcttaatacctaatttcatcattttctgcaaaatgtact	GAAAAGTTGAGTAAAACTATTTGCAACTGGTTTTCAGAAAAGAAAAGAAAAGAAACAACAAG	aaaagttgagtaaaactatttgcaactggttttcagaaaagagaaaagaaacaacaac	TTAAAATGGATAATTTGTAAATAGTTTTTAGCTTTTAAAATTTAAAGTGTTTTTGAGTGT	taaaatggataatttgtaaatagtttttagcttttaaaatttaaagtgtttttgagtg	CGAGGCCGATTTTTTTTTTTAACATGGAACAATGAAACCAACAACAACATTTTTAAAA 1	gaggccgattttttttttttaacatggaacaatgaaaccaacaacaacatttttaa	AGTATTCTTCACGGCAGCCAGAAGTTAATGGTGGTAGCAGCTGAGGTATGGTTGGT	agtattottoacggcagocagaagttaatggtggtagcagotgaggtatggttgttg	TCATGGGCCGTGGAACAGAATATATGTTGGACCTCTGAAAAGTTGTAAGGGGCCAATTCT 1	catgggccgtggaacagaatatatgttggacctctgaaaagttgtaaggggccaaatc	CTGTAGTAGGTGTGTAGTTTGGGGAAGTCAAATGGCCATTTATGTATG	tgtagtaggtgtgtagtttggggaagtcaaatggccattttatgtatg	AAAGTCACCTCACAGCATCTTGCTCCACTCGGCATCTCTGTGAAAGCAACATGAAATGAA	aagtcacctcacagcatcttgctccactcggcatctctgtgaaagcaacatgaaatç	TTTAAAATGACTTTGGGATTAAAAAAGCATATTTCCCAATCATTGTCTTCATTCCACTAC	ttaaaatgactttgggattaaaaaagcatatttcccaatcattgtcttcattccac	TAAAGAAAATGTATTACATTCTGTATGTACAAAGATTAAAAATCAACCTCTTTTTTGTGC	aaagaaaatgtattacattctgtatgtacaaagattaaaaatcaacctcttttttgtg	TTCTATGAAAAATGCATTTTCCAAACAACTTATACATGCTTTTTATGACTATGCCTAATG	tctatgaaaaatgcattttccaaaacaacttatacatgctttttatgactatgcctaa
	· 00	3874	89907	814	189847	3754	189787	3695	189727	3635	189667	3575	189608	3515	189548	3455	189488	3395	189428	3335	189368	3275	189308	3215	189248	3155	189188	3095	189128	3035	189068	2975

RESULT 6
AC09139/c AC091039 159135 bp DNA HTG 11-AUG-2001
LOCUS AC091039 159135 bp DNA HTG 11-AUG-2001
DEFINITION Homo sapiens chromosome 18 clone RP11-403A5 map 18, *** SEQUENCING

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
      BASE
                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
   COUNT
                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S., Barra, N., Bastlen, V., Boguslavkiy, L., Boukhgalter, B., Brown, A., Camparata, J., Campopiano, A., Chang, J., Choepel, Y., Colangelo, M., Collims, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Faro, S., Ferreira, P., FitzHugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Graham, L., Grand-Pierre, N., Hagos, B., Heaford, A., Horton, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Karatas, A., LaRocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacDanald, P., Marquis, N., Matthews, C., McCarthy, M., McLean, C., Macdonald, P., Marquis, N., Matthews, C., Norbu, C., Mihova, T., Mienga, V., Murphy, T., Naylor, J., Muyen, C., Norbu, C., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Raymond, C., Rogetti, M., Roy, A., Santos, R., Schauer, S., Schubback, R., Sewary, P., Sougnez, C., Spencer, B., Stange-Thomann, N., Severy, P., Sougnez, C., Spencer, B., Stange-Thomann, N., Setaleon, J., Travers, M., Travis, M., Trigilio, J., Vassillev, H., Viel, R., Voa, Milson, B., Wu, X., Wyman, D., Ye, W.J., Young, G., Zuhmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (24-MAR-2001) whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Aug 11, 2001 this sequence version replaced gi:14336523. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997) http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens chromosome 18, clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Birren, B., Linton, L., Nusbaum, C. and Lander, E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTG; HTGS_PHASE1; HTGS_FULLTOP; HTGS_ACTIVEFIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AC091039.3 GI:15148197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                            as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 159135)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 159135)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Center project Information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center: Whitehead Institute/ MIT Center Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center clone name: 403_A_5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                69069 69168: contig of 69068 bp
69069 69168: gap of 100 bp
69169 73453: contig of 4285 bp i
73454 73553: gap of 100 bp
73554 159135: contig of 85582 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----- Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                         preserved
/clone="RP11-403A5"
/clone_lib="RPCI-11
28773 c 28100 g
                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                          /map="18"
                                                                                                                          'chromosome="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Metazoa; Chordata;
Eutheria; Primates;
                                                                                                                                                                                                                 .159135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unordered
      Human Male
52128 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pieces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; l
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RP11-403A5
                                                                                                                                                                                                                                                                                                                                  bp in length
                                                                                                                                                                                                                                                                         ij
                                                                                                                                                                                                                                                                                                                                                                                             in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Research
```

```
δõ
                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ОÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 2749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   147053 TGCAGATCCCTATGTCAAAGTGAACCTGTACCATGCCAAAAAGAGAATCTCCAAGAAGAA 146994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        146873
                                                                                                                                                                                                                                                                                                                                               146453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                146573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         146633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1116 ttcagatccctatgtcaaagtgaacctgtaccatgccaaaaagagaaatctccaagaagaa 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
atttaattaattotgtcatgtgcaaatggttgtcctgcatataaaagtatctggtcatttc
                                                                                                                                                                                                                                               ctccttcagattaccagtgatataactaggaatagtcagacattttatgaatactgtgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                aaattttctttctttctatattggattgcaagcttgggaaatcaagctacctttttgttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ctgtgalggttagcatcctagccgtgagttggaacttaaaggtttttactaggcaaggag 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agagcactggaaagagatctgtgactaccccaggagacaaattgccaagtggcacgtgct 1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gtcccgaaatgaggtaatcgggcagttagtcttgggtgcagcagcagcagaaggaactggtgg 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tccttgtgagggccttgaagatataagtgttgaatttttggttttggattctgaaagggg 1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gactcatgtgaagaaatgcacccccaatgcagtgttcaatgagctgtttgtctttgatat
                                                                                                                                                                       ATTTATTAATTCTGTCATGTGCAAATGGTTGTCCTGCATATAAAAGTATCTGGTCATTTC
                                                                                                                                                                                                                                GTTGGGGAAATCAATTTTTCTTTAAATCCAAAGATACTAAAAAAATGTCCTCCAGTTTGT
                                                                                                                                                                                                                                                                                        TTAAGATTTAAAAACGAAAAGTATGCCTTGCCTTGTGAAAATTTATCCATTTATCTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                        CTCCTTCAGATTACCAGTGATATAACTAGGAATAGTCAGACATTTTATGAATACTGTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTGATGGTTAGCATCCTAGCCGTGAGTTGGAACTTAAAGGTTTTTACTAGGCAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGCACTGGAAAGAGATCTGTGACTACCCCAGGAGACAAATTGCCAAGTGGCACGTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCCCGAAATGAGGTAATCGGGCAGTTAGTCTTGGGTGCAGCAGCAGCAGGAACTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTTGTGAGGGCCTTGAAGATATAAGTGTTGAATTTTTGGTTTTTGGATTCTGAAAGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACTCATGTGAAGAAATGCACCCCCAATGCAGTGTTCAATGAGCTGTTTGTCTTTGATAT 146934
                                                                                                                 AGTTTGGTTTGTAATTTTGATGCAATTTTATCATAAGAGTAACTCAGATTCATTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATTTTCTTTCTATATTGGATTGCAAGCTTGGGAAATCAAGCTACCTTTTTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      69.6%;
99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 2709.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                            2135
                                                                                   2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1535
 146034
                                                                                                                                                                                                    1955
                                                                                                                                                                                                                                                             1895
                                                                                                                                                                                                                                                                                                                                                                                                                                     1715
                                                                                                                 146154
                                                                                                                                            2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 146514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         146574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         146814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 146874
                                                        146094
                                                                                                                                                                                                                                146274
                                                                                                                                                                                                                                                                                        146334
                                                                                                                                                                                                                                                                                                                                               146394
                                                                                                                                                                                                                                                                                                                                                                                                        146454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  146634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         146694
                                                                                                                                                                       146214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ψ
```

cggta 3215 GGTA 1449	6 ctgtagtaggtgtgtagtttggggaagtcaaatggccattttatgtatg	Qy 315 Db 14501
4=4	6 aaagtcacctcacagcatcttgctccactcggcatctctgtgaaagcaacatgaaa 	Qy 309 Db 14507
5 = 5	6 tttaaaatgactttgggattaaaaaagcatatttcccaatcattgtcttcattcca 	Qy 303 Db 14513
16 19 19	6 taaagaaaatgtattacattotgtatgtacaaagattaaaaatcaacctotttttt 	Qy 297 Db 14519
TA Ca	6 ttotatgaaaaatgcattttccaaacaacttatacatgctttttatgactatgcct 	Oy 291 Db 14525
gtaa GTAA	6 gttttgtgtcagtactttagcagtttttgagaatgtgtttgatatcacagtgtttg 	Qy 285 Db 14531
gree HII	6 gaattattaattgcaagttagaaattaagtctactgaaaaatttacattttgag 	
cag III	6 gagagtaatgtcactatatttgagttcttagagaagtatgagtggaacttgagtac 	
ago I I I	6 ttcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaagaatta 	
tgaa GAA	16 tctatagagcagtttacagacttgtgtcttgtatcattttccagtgccagggttctc 	Qy 261 Db 14555
rgr - -	56 ttagcacaacaaagaatgtgtttcactatcttttctaggctaatttgtcttgagcto	
tca -	96 tcaagagcgattctaatataatttacatatgttcacgcaaaatatgcttaggctgto 	
ATC	36 tacattyccayataaaaaytyttacttaaccaaccaacaaatytaayactacaaaai 	Qy 243 Db 14573
11-11	76 ttaatttattgtcccccagaaaagattaagatgctacttgaaaagactgtgaagati 	Qy 237 Db 14579
TTC Ltc	16 aagtgtacttttaaggccatcgtttgtacccagagtcggcatggccacctaagtcti 	Qy 231 Db 14585
IGT - -	56 acttcaactagaaatccagttagaagtgcaattttcttataggaaataggtatagtg 	
aat 	96 ctgagaaatccctatgtacctttgtgaaattgttgaattagttag	Oy 219 Db 14597
gtg -	36 acctcacataagaaccatggccttggattattcactgcctgtcacaagcctcagtg	

JOUR FEATUR	REFERENCE AUTHORS	JOUR	REFERENC AUTHOR	00	VERSION KEYWORDS	RESULT AF2990 LOCUS DEFINI	Db 144	Оу з	Db 144	Оу з	Db 144	Qy 3	Db 144		Qy 3 Db 144	Db 144	Фу з	Db 144	ду з	Db 144	ن	Db 144	,	Oy 3	Db 144	Оу з	Db 144	Оу з
ES	ORS	OURNAL	NCE	RGANISM	SION WORDS	T 7	294	874	354	3814 g	414	3754 c	4474 AG	n 0 0	635 t	594 (575	653 G	515 g	713 T	л л	773		336 0	893	276 a	953	216
Submitted (24-AUG-2000) Pharmacology, University of Washington, Health Sciences J681, Seattle, WA 98195, USA Location/Qualifiers	to 1	ptotagmin IV ic Mouse and ility and Tis 275 (47), 30	<pre>uther1a; Primates; Catarrhini; Hominidae; Hon to 1671) p., Chen,xN., Korenberg,J.R. and Herschman,</pre>	IS Metazoa; Chordata; Craniata; Vertebrata; E	AE299075.1 GI:11528336	AF299075 1671 bp mRNA PRI 04-DEC-2000 Homo sapiens synaptotagmin IV mRNA, complete cds.	ÀÀ 144292	caa 3876	GCTCTGTATGATGTTTGTAAGACCATGTTTGTAAGACATGAATAAATTGCTGCTTTTTGCC 144295	ctctgtatgatgttttgtaagaccatgtttgtaagacatgaataaattgctgcttttgcc 3873	CAATAGAAGTGTTTTGGAAGCATGCTGTGTGAGACAGTGTCTGTTCTTTTGTGCCA 144355	, tgttttggaaggaagcatggtgtgtgagacagtgtctgttcttt	GGTATACATGTTTGAAGAACTGTGTAACTCAGTAATTGATTG	2+,+,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	gtattaaacatgtaaattaattgtttgtctgattagccaatctcaccacccaaatgggg 3694 	STTTTAGAATGTATTACAATATCAATGTGAATATCTTGAATCCTGTTACAAATCCTGCAC 144535	ttttagaatgtattacaatatcaatgtgaatatcttgaatcctgttacaaatcctgc		gaattgaaacaggcagggagatcttaatacctaatttcatcatttctgcaaaat;		00007++7007+00007+0++++7770007+77++++700700	ALLAAAARIGGATAATITGTAAARIAGTTTTTAGCTTTTAAAARTTTAAAGTGTTTTTGAGTG 144714 		gaggooga-tttttttttttaaa atggaacaatgaaagcaacaacaacaatttttaaa 3394 	TATTCTTCACGGCAGCCAGAAGTTAATGGTGGTAGCAGCTGAGGTATGGTTGTTGG	agtattetteaeggeageeagaagttaatggtggtageagetg	TCATGGGCCGTGGAACAGAATATATGTTGGACCTCTGAAAAGTTGTAAGGGGCCCAATTCT 144894	catgggccgtggaacagaatatgttggacctctgaaaagttgtaaggggccaaatct 3275

```
γ
                                                                                                                                                                                                                                                                                                                                                                                                                            BASE CO
 gg
Qy
                                          γQ
                                                          DЬ
                                                                          Ωy
                                                                                         DЪ
                                                                                                          20
                                                                                                                                      δÃ
                                                                                                                                                         В
                                                                                                                                                                       γQ
                                                                                                                                                                                      ₽
                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                    δō
                                                                                                                                                                                                                                                    рь
                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                      γQ
                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                    Qγ
                            В
                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                      Оy
                                                                                                                                                                                                                                                                                                                                                                                     Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                         249
                                                                                                                                                                                                                                                                       246
 669
                726
                                 609
                                                                549
                                                                              909
                                                                                              489
                                                                                                             546
                                                                                                                             429
                                                                                                                                            486
                                                                                                                                                            369
                                                                                                                                                                           426
                                                                                                                                                                                          309
                                                                                                                                                                                                          366
                                                                                                                                                                                                                                         306
                                                                                                                                                                                                                                                         189
                                                                                                                                                                                                                                                                                         129
                                                                                                                                                                                                                                                                                                        186
                                                                                                                                                                                                                                                                                                                                       126
                                                                                                                                                                                                                                                                                                                                                                                     y Match
Local Similarity
hes 1662; Conserv
                                                                                                                                                                                                                                                                                                                       69
                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                      9
                                                              gtcagtttcccctgagagtttaaagtccagcacttcccttacttcagaagagaaacaaga
                                                                                                                            tggcagtccttctgatctggagaatgcaaccccgaagctctttttagaaggggaaaaaga
                                                                                                                                                           ctttgcatggatctgctgtcagagaaaatcatccaagtctaacaagactcctccatacaa
                                                                                                                                                                                                                                                                                       atatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagtgctgag
                                                                                                                                                                                                  gtttggagcagatgataaaaatgaagtaaaggaataagccagctgtgccaaaggaattcatt
 ATATATCAAAATGACGATCCTCCCAGAGAAGAAGCATAAAGTGAAAACTAGAGTGCTGAG
                                CAATATCAAGGAAGCCCGTGGCTTGCCAGCCATGGATGAGCAGTCGATGACCTCTGACCC
                                        caatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctctgaccc
                                                                                                                                                                                           GTTTGGAGCAGATGATAAAATGAAGTAAAGAATAAGCCAGCTGTGCCAAAGAATTCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                    513
                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                 /COGON_Start=1
/prodon_start=1
/prodon_id="naG37229:1"
/protein_id="naG37229:1"
/protein_id="naG37229:1"
/db_xref="01:11528337"
/db_xref="01:11528337"
/translation="mapittsreefdeiptvvgifsafglvftvslfawiccorkssk
swrtppykfvlfyvdiypeklnskkkfgaddknevknkpavpknsLHLDLEkkrOln
gnfpknlkfdspfbllenafpklflegeksesvspeslksstsltseekoeklGtlfffs
Leynerkafvvnikearglpaadeoswisdpvikmfilpekkhkvktrvlrktldpa
fdeftfffygigvfolgelalhffilsfdrfsrddiigevliplsgielsegkmLnnre
itkrnvrksgrrgellalhftilsfdrfsrddiigevliplsgielsegkmLnnre
itkrnvrksgrrgellalhftilsfdrfsrddisvefelvldsergsrnevigqlv
Lgaaaegtgehwkeicddyprrolakwhvlcdg"
13 a 330 c 372 g 456 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .1671

/organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="18"
/map="18q12.3"
94. .1371
                                                                                                                                                                                                                                                                                                                                                                                              99
                                                                                                                                                                                                                                                                                                                                                                                            . 48
                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                            1651;
No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                    DВ
                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                               608
                                                                              665
                                                                                              548
                                                                                                                             488
                                                                                                                                                           428
                                                                                                                                                                           485
                                                                                                                                                                                                          425
                                                                                                                                                                                                                                                                                        188
                                                                                                                                                                                                                                                                                                                       128
                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                      68
                                668
                                                                                                             605
                                                                                                                                           545
                                                                                                                                                                                                                          308
                                                                                                                                                                                                                                         365
                                                                                                                                                                                                                                                         248
                                                                                                                                                                                                                                                                       305
                                                                                                                                                                                                                                                                                                       245
                                              725
                                                                                                                                                                                          368
                                                                                                                                                                                                                                                                                                                                                                          Qy
ACCESSION
VERSION
                               RESULT 8
AC068125/c
LOCUS
                                                                                                                Qy
                                                                                                                                                 δõ
                                                                                                                                                                  B
                                                                                                                                                                               Qy
                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                        QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                    δõ
                                                                                                     д
                                                                                                                                Вb
                                                                                                                                                                                                 В
                                                                                                                                                                                                                                Вb
                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                              В
                        DEFINITION
                                                                                                                                                                  1449
                                                                                                                                                                                                                1446
                                                                                                                                                                                                                                 1329
                                                                                                                                                                                                                                                1386
                                                                                                                                                                                                                                                                                               1209
                                                                                                                                                                                                                                                                                                                              1149
                                                                                                                                                                                                                                                                                                                                              1206
                                                                                                                                                                                                                                                                                                                                                                            1146
                                                                       1629
                                                                                                                                     1509
                                                                                                                                                                                                 1389
                                                                                                                                                                                                                                                                                                                                                             1089
                                                                                                                                                                                                                                                                                                                                                                                             1029
                                                                                                                                                                                                                                                                                                                                                                                                            1086
                                                                                                                                                                                                                                                                                                                                                                                                                                          1026
                                                                                                                                                                                                                                                                                                                                                                                                                           969
                                                                                                                                                                                                                                                                                                                                                                                                                                                           909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         786
AC068125 17
Homo sapiens seQUENCE, 16
AC068125
AC068125.5 G
```

```
ttggataaattttcataagatattcaatatctccttcagattaccagtgatataactagg
                                                              agtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaaggtattaagtgt
                                                                                                                                                                                                                                                                                                                                                                     tgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcagttagt
                                                                                                                                                                                                                                                              | CCatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcacccccaatgc
                                                                                                                                                                                                TGAATTTTTGGTTTTGGATTCTGAAAGGGGGTCCCGAAATGAGGTAATCGGGCAGTTAGT
                                                                                                                                                                                                                            AGTGTTCANTGAGCTGTTTGTCTTTGATATTCCTTGTGAGGGCCTTGAAGATATAAGTGT
                                                                                                                                                                                                                                                        CCATGCCAAAAAGAGAATCTCCAAGAAGAAGACTCATGTGAAGAAATGCACCCCCAATGC
             1728
                                                                                                                                                                                                             1325
                                                                                               1565
                                                                                                             1448
                                                                                                                                                      1445
                                                                                                                                                                                 1385
                                                                                                                                                                                                1268
                                                                                                                                                                                                                                         1265
                                                                                                                                                                                                                                                       1148
                                                                                                                                                                                                                                                                                   1088
                                                                                                                                                                                                                                                                                               1145
                                                                                                                                                                                                                                                                                                             1028
                                                                                                                           1505
                                                                                                                                         1388
                                                                                                                                                                    1328
                                                                                                                                                                                                                            1208
                                                                                                                                                                                                                                                                                                                           1085
                                                                                                                                                                                                                                                                                                                                           968
                                                                                                                                                                                                                                                                                                                                                       1025
                                                                                                                                                                                                                                                                                                                                                                     908
                                                                                                                                                                                                                                                                                                                                                                                                 848
                                                                                                                                                                                                                                                                                                                                                                                                             905
                                                                                                                                                                                                                                                                                                                                                                                                                             788
                                                       1568
                                                                                                                                                                                                                                                                                                                                                                                   965
                                                                                                                                                                                                                                                                                                                                                                                                                                           845
```

170218 bp ens chromosome 16 unordered p

DNA 18 clone pieces.

> HTG RP11-403A5,

> 24-AUG-2000 WORKING DRAFT

```
TITLE
JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center: Washington University Genome Sequencing Center Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (28-APR-2000) Genome Sequencing Center, Washington
Submitted (28-APR-2000) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 170218)
Waterston,R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 170218)
Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The sequence of Homo sapiens clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     as soon
be prese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: This is a 'working draft' sequence. It currently consists of 16 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63108,
                                          83184
99045
99145
99145
135642
135742
137571
137571
137671
141528
141528
                                                                                                                                                                                                                                                                                                                                      8711
8811
18253
18353
27042
27142
27142
33916
34016
43726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HTGS_PHASE1; HTGS_DRAFT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 2000 this sequence version replaced gi:9739343.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8710:
                                                                                                                                                           0: contig of 8710 bp in length
0: gap of unknown length
2: contig of 9422 bp in length
2: gap of unknown length
1: contig of 8689 bp in length
1: contig of 8689 bp in length
1: gap of unknown length
2: contig of 8774 bp in length
3: gap of unknown length
4: contig of 9710 bp in length
4: contig of 12179 bp in length
4: contig of 12179 bp in length
4: gap of unknown length
4: gap of unknown length
4: gap of unknown length
3: contig of 14239 bp in length
3: contig of 16250 bp in length
4: contig of 15861 bp in length
4: contig of 16497 bp in length
  gap of contig gap of contig
                                                                                   of unknown length
ig of 1829 bp in length
of unknown length
ig of 3857 bp in length
                                                           f unknown
g of 6166
      unknown
of 8006
unknown
                     ďď
                                                       bp in length
                                      length
                                                                        Length
                       length
                                                                                                                                                                                                                                        ОĀ
                                                         Db 155767
                                                                                                                                                                                                        Db 155886
                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 40.4%;
Best Local Similarity 93.6%;
Matches 1631; Conservative
                                                                                                                                                                                                                                                                                                                2197
                                                                                                                                                                                                                                                                                                                                                                                     2137 cctcacataagaaccatggccttggattattcactgcctgtcacaagcctcagtgtggcc 2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
acattgccagataaaaagtgttacttaaccaaccaaacgaatgtaagactacaaatggtt 2496
                                                                                                                                                 agtgtacttttaaggccatcgtttgtacccagagtcggcatggccacctaagtcttcatt 2376
                                                                                                                                                                                                                         cttcaactagaaatccagttagaagtgcaattttcttatagggaaataggtatagtgtgca 2316
                                                       TAATTTATTGTCCCCCAGAAAAGATTAAGATGCTACTTGAAAAGACTGTGAAGATTTTTT 155708
                                                                                                                               AGTGTACTTTTAAGGCCATCGTTTGTACCCAGAGTC-GCATGGCCACCTAAGTCTTCATT 155768
                                                                                                                                                                                                    CTTCAACTAGAAATCCAGTTAGACGTGCAATTTTCTTATAGGAAATAGGTATAGTGTGCA 15582
                                                                                                                                                                                                                                                                                                              taatttattgtcccccagaaaagattaagatgctacttgaaaagactgtgaagatttttt 2436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52643 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_name:Contig8"
162503. 170218
/note="assembly_name:Contig9"
. 30665 c 30050 g 55356 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   43825. . 56004
/note="assembly_name:Contig15"
56105. . 70333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_name:Contig7"
156000. .162402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_name:Contig6'
147894. .155899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_name:Contigl4"
43826. .56004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig13"
34016. .43725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note="assembly_name:Contig12"
27142. .33915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_name:Contig10
clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0 162402: contig of 6403 bp in length 162502: gap of unknown length 3 170218: contig of 7716 bp in length Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="assembly_name:Contig19"
135742. .137570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="RP11-403A5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_name:Contig18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_name:Contig17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="assembly_name:Contig5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="assembly_name:Contig16"
0434 .83083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="assembly_name:Contigl1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ="assembly_name:Contig4"
'1. .141527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .18252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .27041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9904
                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1571.8; DE Pred. No. 1e-292; 0; Mismatches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                         107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1504 others
                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 5; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 170218;
```

```
δÃ
                                                                                                                                        Qy
                                                                                                                                                         Вр
                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                             Qy
                                                             ₽
                                                                            δÃ
                                                                                            Ъ
                                                                                                                           рЬ
                                                                                                                                                                      οy
                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вb
              Qy
                               Вb
망
                                                                                             154807
                                                                                                                                                          154927
                                                                                                                                                                                                                                                      155107
                                                                                                                                                                                                                                                                                                                                                 155287
                                                                                                                                                                                                                                                                                                                                                                                                             155407
                                                                                                                                                                                                                                                                                                                                                                                                                                           155467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155707
 154627
                                                                                                                           154867
                                                                                                                                                                                        154987
                                                                                                                                          3277
                                                                                                                                                                                                                                      3097
                                                                                                                                                                                                                                                                    3037
                                                                                                                                                                                                                                                                                                   2977
                                                                                                                                                                                                                                                                                                                                  2917
                                                                                                                                                                                                                                                                                                                                                                2857
                                                                                                                                                                                                                                                                                                                                                                                             2797
                                                                                                                                                                                                                                                                                                                                                                                                                            2737
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ctatagagcagtttacagacttgtgtcttgtatcattttccagtgccagggttctgaaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aattattaaatatgcaagttagaaattaagtctactgaaaaatttacattttgagtcagg
                                                                                                                                                                                                                                                                                                                                                                                                                    agagtaatgtcactatatttgagttcttagagaagtatgagtggaacttgagtacagttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       catgggccgtggaacagaatatatgttggacctctgaaaagttgtaaggggccaaatcta
                                                                                                                                                                                                aagtcacctcacagcatcttgctccactcggcatctctgtgaaagcaacatgaaatgaac
                                                                                                                                                                                                                                                                                                                                                        TCATTCAGAACCTGTTAGATTAAAGCTGCACCCTGTGATTATTTGAAAAGAATTAGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  tcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaagaattagcttg
                                                                                                                                                         CATGGGCCGTGGAACAGAATATGTTGGACCTCTGAAAAGTTGTAAGGGGCCAATTCTA
                                                                                                                                                                                       AAGTCACCTCACAGCATCTTGCTCCACTCGGCATCTCTGTGAAAGCAACATGAAATGAAC
                                                                                                                                                                                                                                                     TTAAAATGACTTTGGGATTAAAAAAGCATATTTCCCCAATCATTGTCTTCATTCCACTACA
                                                                                                                                                                                                                                                             AATTATTAAATATGCAAGTTAGAAATTAAGTCTACTGAAAAATTTACATTTTGAGTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTAATGTCACTATATTTGAGTTCTTAGAGAAGTATGAGTGGAACTTGAGTACAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caagagcaattctaatataatttacatatgttcacgcaaaatatgcttaggctgtcaaat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3036
                                                                                                                                                                                                                                                                                                                                 2976
                                                                                                                                                                                                                                                                                                                                                              2916
                                                                                                                                                                                                                                     3156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2676
               3574
                               154628
                                              3514
                                                                                            154748
                                                                                                                                                         154868
                                                                                                                                                                                                       3216
                                                                                                                                                                                                                                                     155048
                                                                                                                                                                                                                                                                                    155108
                                                                                                                                                                                                                                                                                                                 155168
                                                                                                                                                                                                                                                                                                                                                155228
                                                                                                                                                                                                                                                                                                                                                                               155288
                                                                                                                                                                                                                                                                                                                                                                                             2856
                                                                                                                                                                                                                                                                                                                                                                                                             155348
                                                                                                                                                                                                                                                                                                                                                                                                                                           155408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        155528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       155588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      155648
 154569
                                                              154688
                                                                                                                           154808
                                                                                                                                                                                       154928
                                                                                                                                                                                                                       154988
```

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
JOURNAL
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
MMU10355
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                    SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Дδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     154328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3575
                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gttttagaatgtattacaatatcaatgtgaatatcttgaatcctgttacaaatcctgcac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     aggtatacatgtttgaagaac-gtgtaactcggtaattgatttgttctgatgttgtaact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTTTAGAATGTATTACAATATCAATGTGAATATCTTGAATCCTGTTACAAATCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hilbush, B.S.
Direct Submission
Submitted (03-JUN-1994) Brian S.
Molecular Biology, 340 Kingsland
Location/Qualifiers
                                                                                                                                                                                                                                                               90238548
3 (bases
                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; 1 (bases 1 to 3992)
Hilbush,B.S. and Morgan,J.I.
A third synaptotagmin gene, syt3, in the mouse proc. Natl. Acad. Sci. U.S.A. 91, 8195-8199 (1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus
U10355
                                                                                                                                                                                                                                                                                Perin, M.S., Fried, V.A., Mignery, G.A., Jahn, Phospholipid binding by a synaptic vesicle the regulatory region of protein kinase C Nature 345 (6272), 260-263 (1990)
                                                                                                                                                                                                                                                                                                                                                                                                                    Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                     U10355.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MMU10355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154266
                                                                                                                                                                                                                                                  (bases 1 lbush, B.S.
                                                                                                                                                                                                                                                                                                                                                                                                                    musculus
                                                                              /gene="syt4"
1716. 2993
/gene="syt4"
/codon_start=1
/tissue_type="brain"
1716. .2993
                                                                                                                                                /organism="Mus musculus"
/strain="BALB/c"
/db_xref="taxon:10090"
/clone="p171"
                                                                                                                                                                                                                                                                                                                                                                                                                                                      GI:499125
                                                                                                                                                                                                                                                             to 3992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3992 bp
BALB/c s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          synaptotagmin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA
                                                                                                                                                                                                                St., Nutley, NJ 07110, U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (syt4)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ROD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA,
                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                    R. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          complete
                                                                                                                                                                                                                                                                                                                    Sudhof, T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-AUG-1994
                                                                                                                                                                                                                                                                                                         homologous
                                                                                                                                                                                                                                                                                                                                                                                                          Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cds
                                                                                                                                                                                                                             ot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      154269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                154329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            154389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 154509
                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                Mus
```

BASE COUNT ORIGIN

```
Query Match
Best Local Sim
Matches 1781;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                      AGAGTGCTCAGGAAGACGCTGGACCCTGTTTTTGGTGAAACCTTCACATTCTATGGAATC
                                                                 agagtgctgagaaaaaccttggatccagcttttgatgagacctttacattctatgggata
                                                                                                                             acctctgacccatatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaact
                                                                                                                                                                                                                                                                                                                      9999aaaaagagtcagtttcccctgagagtttaaagtccagcacttcccttacttcagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tcccttcagcacctcggacagaacacgcagtaaaaaaatggctccgatcaccaccagccgg 174
 ccctacacccaaatccaagaattggccttgcacttcacaattttgagttttgacaggttt
                                                                                                          ACCTCTGACCCGTACATCAAAATGACAATCTTACCAGAGAAGAAGCACAGAGTGAAGACC
                                                                                                                                                                                                                                                                                                                                                                                        aaceteaaaeetggeagteettetgatetggagaatgeaaeeeegaagetetttttagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                     | aagaattcattgcatctggatcttgaaaagagagatctcaattggcaattttccccaaaacc 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cctccatacaagtttgtgcatgtgcttaagggagttgatatttaccctgaaaaacctaaat 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acagtototototttgcatggatotgotgtoagagaaaatoatocaagtotaacaagact 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGGAATTCGATGAAATTCCCACAGTGGTGGGCATCTTCAGTGCTTTTGGCCTCGTCTTC 1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACAGAAAAGGAGGCCAATTCCCCTGAGAGCTTGAAGTCCAGCACTTCCCTCACGTCAGAG
                                                                                                                                                                                                                                                                                                                                                                   AACCCCAAAGCTGGCAGCTCTTCTGATCTGGAAAATGTCACCCCAAAGCTCTTTACGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCTTTCCCTGCATCTTGACCTAGAGAAGCGAGACCTCAATGGCAACTTCCCCAAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCCAAAAGAAGTTTGGAGGAGATGACAAGAGTGAAGTGAAGGGTAAAACCGCTCTGCCC 1979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agcaaaaagaagtttggagcagatgataaaaatgaagtaaagaataagccagctgtgcca 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCCATACAAGTTTGTGCACGTGCTTAAAGGAGTTGATATCTACCCAGAAAACCTAAGT 1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTGTCTCTCTTTGCCTGGATCTGCTGTCAGAGAAGATCAGCCAAATCCAACAAGACT 1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCTTTCAGCACCTCGGACAGAGCACGCAG-AAAACATGGCTCCTATCACCACCAGCCGC 1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   33.58;
Similarity 77.48;
31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="C2A repeat region, amino acids 148-257, repeat homologous to the protein kinase C C2 di in all members of the synaptotagmin family" /citation=[2] 2556. 2899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2556. 2899

'gene="syt4"

/gene="syt4"

/note="C2B repeat region, amino acids 281-394, internal

/note="C2B repeat region, amino acids 281-394, internal

repeat homologous to the protein kinase C C2 domain four

in all members of the synaptotagmin family"

/citation=[2]

/citation=[2]

894 c 986 g 1033 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LGATAEGSGGGHWKEICDFPRRQIAKWHMLCDG"
2157. . 2486
//gene="syt4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IIKRNAKKSSGRGELLVSLCYQSTINTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHA
KKRISKKKTHVKKCTPNAVFNELFVFDIPCESLEEISVEFLVLDSERGSRNEVIGRLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1305.4; DB 10; Length 3992; Pred. No. 1.8e-241; Dismatches 461; Indels 59;

    internal domain fou

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                          2279
                                                                                                                                                                                                                                        2219
                                                                                                                                                                                                                                                                                                                                                                     2099
                                                                                                                                                                                                        714
                                                                                                                                                                                                                                                                                                                                                                                                                                   2039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14;
 밁
                      QΥ
                                                          В
                                                                                      QΥ
                                                                                                                       DЪ
                                                                                                                                                   Qy
                                                                                                                                                                                       Dβ
                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                    Вр
                                                                                                                                                                                                                                                                                                                                               QУ
                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ДĎ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вþ
 3477
                               1891
                                                                                           1837
                                                                                                                           3357
                                                                                                                                                           1777
                                                                                                                                                                                         3297
                                                                                                                                                                                                                       1717
                                                                                                                                                                                                                                                       3237
                                                                                                                                                                                                                                                                                      1657
                                                                                                                                                                                                                                                                                                                    3177
                                                                                                                                                                                                                                                                                                                                                  1599
                                                                                                                                                                                                                                                                                                                                                                                  3117
                                                                                                                                                                                                                                                                                                                                                                                                                  1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                  3057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       895
ttgggggaaatcaatttttctttaatccaaagatactaaaaaaatgtcctccag-----
                                                                                                                         gaatcccaaattataaatgtgacaatctcattggaacatgtcacaaaaagttaatgtgat 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 attggattgcaagcttg--ggaaatcaagctacctttttgtt------gttgt 1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGGGGGAGATAGGTTTTAATTAAATCCCAAGATATTTCCCAAATGTCCTCCAGTCTGGT
                                                                                                                                                                                         ACAGATGTGTTGTAGGTGATGGTTTCAGTTTTGCTTGGTAGTGGAAATCAGGTGATTG
                                                                                                                                                                                                                                                                                   tccttcagattaccagtgatataactaggaatagtcagacattttatgaatactgtgcca 1716
                                                                                                                                                                                                                                                                                                                  TGTTTTGGTTAGAAGTGGATTAAGTTAATAGACCAGAAAATAGTTGTAAATGTGTATTTA 3176
                                                                                                                                                                                                                                                                                                                                                                                                   tgttgttgctagaaatggattgaattagtagaccagaaagtaacttcaaatgtgta-tta 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTGACTTCCCCAGGAGACAAATTGCTAAGTGGCACATGCTCTGTGATGGTTAGCTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tgtgactaccccaggagacaaattgccaagtggcacgtgctctgtgatggttagcatcct 1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gggcagttagtcttgggtgcagcagcagaaggaactggtggagagcactggaaagagatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAATCAGTGTTGAATTCTTGGTTTTTGGATTCTGAAAGGGGATCCCGAAATGAGGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gatataagtgttgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gtgaacctgtaccatgccaaaaagagaatctccaagaagaagaagactcatgtgaagaaatgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTTATCCCCACATCCAAGAGCTCTCCTTGCACTTTACAGTTCTGAGTTTTGACAGGTTT
                                                                                                                                                                                                                                                       TCTGTGTGGTATTAAGTGGGCCAACCCAGCCTGTTATGAGCACCCTAGCTTAACCTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                              GGACGGTTGGTCCTGGGTGCCACAGCAGAAGGAAGCGGTGGGGGGGCACTGGAAGGAGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGAACCTGTACCATGCCAAGAAGAATCTCTAAAAAAGAAGTCACGTTAAGAAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAAAAATGTTAATGACTAGAGAGATCATCAAGAGAAATGCTAAGAAGTCTTCTGGCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ggaaaaatgttaatgaatagagagatcatcaagagaaatgttaggaagtcttcaggacgg 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTAGAGATGATGTCATTGGAGAAGTCCTGATTCCTCTTTCAGGGATTGAATTATCAGAT 2519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1836
                                                                                         1890
                                                                                                                                                                                                                                                                                                                                                                                                                                              3116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2639
```

Š g QΥ д ρ В Qy Дb Qγ В QΥ Ъ γQ В δÃ Ъ QY В QΥ Вb δÃ рь γ В Qy

2280

2160

655

2100

2040

475

1980

415

1920

1860

1800

235

1740

175

```
JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                RNU14398
LOCUS
                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1947
                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGAACACTGTGGTTGATATGAGATTTTTTTTTTTTCCA---TCACATGTGAGTCA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ggtcatttcagtttggtttgtaattatttgatgcaattttatcataaga---gtaactca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACTTAAGTTTTTAACTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaataaagaaataaacttcaactagaaattccagttagaagtgcaattttcttataggaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ttttgtaaaatataacctcacataagaaccatggccttggattattcactgcctgtcaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tgagaacactgtgggctgaaatataatttttctcccccctaaggttacatgtgagtcaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cacctaagtcttcatttaatt 2381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---TGTAAAATTTAACTTCACCTAAGAACCATGGTCTTGAATTATTCACTGCCTGTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    {\tt AGCCTCAGTGTGGCCTAAGATACTCCTATTTACCATTGTGAAGTTGTCAGACTAGTGA---}
                                                                                                                                                           Direct Submission
Submitted (06-SEP-1994) Thomas C. Sudhof, Howard Hughes
Institute, University of Texas Southwestern Medical Cent
Harry Hines Boulevard, Dallas, TX 75235-9050, USA
Location/Qualifiers
                                                                                                                                                                                                                                                 Ullrich,B., Li,C., Zhang,J.Z., McMahon,H., Anders
Geppert,M. and Sudhof,T.C.
Functional properties of multiple synaptotagmins
Neuron 13 (6), 1281-1291 (1994)
95085772
                                                                                                                                                                                                                                                                                                                                                                                                        Rattus norvegicus
U14398
                                                                                                                                                                                                                            Sudhof, T.C.
                                                                                                                                                                                                                                                                                                                        Rattus
                                                                                                                                                                                                                                                                                                                                   Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                       Norway
                                                                                                                                                                                                                                                                                                                                                                                               U14398.1
                                                                                                                                                                                                                                                                                                                                                                                                                                RNU14398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     - AAAAAAATAAACCTAAGCTAGCAATTCAGTTAGGAATACATTTTTTAAATATAAA
                                                                                                                                                                                                                                      (bases 1 to 2060)
                                                                                                                                                                                                                                                                                                           (bases 1 to 2060)
                                              /note="similar to
IV, GenBank *
                                                                    /tissue_type="brain"
/dev_stage="adult"
268. .1545
/codon_start=1
/product="synaptotagmin :
/protein_id="AAA68519.1"
/db_xref="GI:550454"
                                                                                                                                                                                                                                                                                                                                                                                             GI:550453
                                                                                                                                         /organism="Rattus norvegicus"
                                                                                                                                /db_xref="taxon:10116"
                                                                                                                  clone_lib="Strategene"
                                                GenBank Accession
                                                                                                                                                                                                                                                                                                                                                                                                                                2060
                                                                                                                                                                                                                                                                                                                                                                                                                  bp mRNA
synaptotagmin
                                                                                                                                                                                                                                                                                                                                  Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3956
                                                         protein
                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae;
                                           Number U10355"
                                                                                                                   lambda
                                                                                                                                                                                                                                                                                                                                                                                                                     ٧I
                        ٧I
                                                         encoded
                                                                                                                                                                                                                                                                                                                                                                                                                  homolog
                                                                                                                  ZAP
                                                                                                                                                                                                                                                                                              Anderson, R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA,
                                                                                                                   adult
                                                         mouse
                                                                                                                                                                                                                                                                                                                                                                                                                    21-JUN-1995
complete cds
                                                                                                                   rat
                                                                                                                                                                                                                                                                          Ħ
                                                                                                                                                                                                                                                                          brain
                                                         synaptotagmin
                                                                                                                   brain
                                                                                                                                                                                         Medical
ter, 5323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 3761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3704
                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3819
                       Вb
                                         δÃ
                                                                    Вb
                                                                                        Qγ
                                                                                                                 B
                                                                                                                                      Qy
                                                                                                                                                                                                             В
                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                 В
                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                            Вb
                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                           Вр
                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                          Вр
                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
```

Qy 멍 Qy 맑 Qy В Qγ B Qy DЬ Qy DЬ Q

Вþ Qy 밁

```
Ø
                         /translation="MAPITTSRVEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRRSAK
SNKTPPYKFVHVLKGVDIYPENLSSKKKEGGDDKSEAKKRALFUNLSLHLDLEKRDLN
GNEPKTNEKAGSSSDLENVTPKLFPETBKEAVSPESLKSTSLTSEEKGEKLGTLFLS
LEYNFEKKAFVVNIKEAGGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPV
EDETFTFFYGVPVPHIGELSLHFTVLSFDRFSRDDVIGEVLVPLSGIELSDGKMLMTRE
IIKRNAKKSGGRGELLVSLCYGSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHA
KKRISKKKTHVKKCTPNAVFNELFVFDIFCESLEEISVBFLVLDSERGSRNEVIGRLV
LGATAEGSGGGHWKEICDFPRRQIAKWHMLCDG"
   C
   480
g
           547
```

```
Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 84.0
Matches 1306; Conservative
                            1002
  945
                                                                              942
                                                                                                                                882
                                                                                                                                                         765
                                                                                                                                                                                   822
                                                                                                                                                                                                           705
                                                                                                                                                                                                                                   762
                                                                                                                                                                                                                                                            645
                                                                                                                                                                                                                                                                                      702
                                                                                                                                                                                                                                                                                                              585
                                                                                                                                                                                                                                                                                                                                         642
                                                                                                                                                                                                                                                                                                                                                                 525
                                                                                                                                                                                                                                                                                                                                                                                            582
                                                                                                                                                                                                                                                                                                                                                                                                                    465
                                                                                                                                                                                                                                                                                                                                                                                                                                             522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     attatctgaaggaaaaatgttaatgaatagagagatcatcaagagaaatgttaggaagtc 100
                                                                                                                                                                                                                                                                                   CACCAGCCGCGTGGAATTCGATGAAATTCCCACAGTGGTGGGCATCTTCAGTGCTTTTGG
                                         CTATGGGGTCCCTTATCCCCACATCCAAGAGCTGTCCCTGCACTTCACCGTCCTGAGTTT
                                                                                           ctatgggataccctacacccaaatccaagaattggccttgcacttcacaattttgagttt
                                                                                                                                           agtgaaaactagagtgctgagaaaaaccttggatccagcttttgatgagacctttacatt 824
                                                                                                                                                                                                gcagtcgatgacctctgacccatatatcaaaatgacgatcctcccagagaagaagcataa
                                                                                                                                                                                                                                    CGAGAAGAAAGCATTTGTGGTGAACATCAAGGAAGCCCCAGGGCTTACCAGCCATGGATGA
                                                                                                                                                                                                                                               CTTTCCGGAGACGGAAAAGGAGGCCGTCTCCCCTGAGAGCTTGAAGTCCAGCACTTCCCT
                                                                                                                                                                                                                                                                                                                                                                                         taacaagactcctccatacaagtttgtgcatgtgcttaagggagttgatatttaccctga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cctggtcttcacagtctctctctttgcatggatctgctgtcagagaaaatcatccaagtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caccagccgggaagaatttgatgaaatccccacagtggtgggggatcttcagtgcatttgg
                          TGACAGGTTCTCAAGAGATGATGTCATTGGAGAAGTCCTCGTTCCTCTTTCAGGGATTGA
                                                                                                                                AGTGAAAACCAGAGTGCTGAGGAAGACGCTGGACCCCGTGTTTGACGAAACCTTCACATT
                                                                                                                                                                                   ACAATCCATGACCTCTGACCCATACATCAAGATGACAATCTTACCAGAGAAGAAGCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTTTGCCTAACCTTTCCCTGCACCTTGATCTCGAGAAGCGAGACCTCAATGGCAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAACCTAAGTAGCAAAAAGAAGTTTGGAGGAGGATGACAAGAGTGAAGCAAAGCGTAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACAAGACTCCTCCATACAAGTTTGTGCACGTGCTTAAAGGAGTTGATATCTACCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTGGTCTTCACTGTCTCTCTTTGCCTGGATCTGCTGCCAGAGAAGATCCGCTAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1124.6;
Pred. No. 1.2e-
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1
3-206;
244;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2060;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                              1001
                                                                                                       884
                                                                                                                                                                                                                                                                                                                                                                                                                 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             224
                                                                                                                                941
                                                                                                                                                                                   881
                                                                                                                                                                                                           764
                                                                                                                                                                                                                                   821
                                                                                                                                                                                                                                                                                                              644
                                                                                                                                                                                                                                                                                                                                         701
                                                                                                                                                                                                                                                                                                                                                                 584
                                                                                                                                                                                                                                                                                                                                                                                          641
                                                                                                                                                                                                                                                                                                                                                                                                                                             581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            284
                                                                                                                                                                                                                                                            704
                                                                                                                                                                                                                                                                                      761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ψ
```

```
JOURNAL
MEDLINE
FEATURES
                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1005 ttcaggacggggtgagttactgatctctctctgctatcagtccaccaccacacactctaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1062
                                                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGTTAGAAGTGGATTAAATTAGTAGACCAGAAGATAGCTGTAAATGTGTATTATGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ttctttctatattggattgcaagcttg-ggaaatcaagctacctttttgttgttgttgttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ctatgtcaaagtgaacctgtaccatgccaaaaaagagaatctccaagaagaagactcatgt 1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gaaagagatctgtgactaccccaggaagacaaattgccaagtggcacgtgctctgtgatgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tgaggtaatcgggcagttagtcttgggtgcagcagcagaaggaactggtggagagcactg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       999ccttgaagatataagtgttgaatttttggttttggattctgaaagggggtcccgaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gaagaaatgcaccccaatgcagtgttcaatgagctgtttgtctttgatattccttgtga 1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tgtggttgtcttaaaagctcgacatctgcctaaatctgatgtgtccggactttcagatcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGAGATCTGTGACTTCCCCCAGGAGACAAATTGCTAAGTGGCATATGCTCTGTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGTCTTGAAGAAATAAGTGTTGAATTTTTAGTTTTTGGATTCTGAAAGGGGATCCCGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAAAAAGTGCACTCCCAACGCAGTGTTCAACGAACTGTTTGTCTTTGATATTCCTTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTACGTCAAAGTGAACCTGTACCATGCCAAGAAGAAGAATCTCTAAAAAAGAAGACTCACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTGGTTGTCTTAAAAGCGCGGCACCTACCGAAATCTGATGTGTCTGGACTTTCAGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCTGGACGGGGTGAACTTCTGGTCTCCCTCTGTTATCAGTCCACTACAAACACGCTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rattus norvegicus (clone PCR2) synaptotagmin IV mRNA, comple 138247.1 GI:598376 immediate early gene; synaptotagmin; synaptotagmin IV. Rattus norvegicus (strain New England Deaconess Hospital) (clibrary: lambda ZAP PCl2+ library (L. Vician and I.K. Lim)) pheochromacytoma cDNA to mRNA.
Rattus norvegicus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleo; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae
                                                                      l (bases 1 to 1576)
Vician, L., Lim, I.K., Ferguson, G.,
Herschman, H. R.
Synaptotagmin IV is an immediate edepolarization in PC12 cells and i Proc. Natl. Acad. Sci. U.S.A. 92 (95199312
                                                                                                                                                                                                  Rattus
                                                                                                                                                                                                                                                                                                                                                                          1576
norvegicus
/organism="Rattus norvegicus"
/strain="New England Deaconess
                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                          clone
                                                                                                                                                                                                          Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                        mRNA ROD
e PCR2) synaptotagmin
                                                                                                                          early gene induced by
                                                                                      in brain
(6), 2164-2168 (1995)
                                                                                                                                                             Tocco, G.,
Hospital"
                                                                                                                                                             Baudry, M.
                                                                                                                                                                                                                                                                                                                                                                        24-MAY-1995
mRNA, complet
                                                                                                                                                                                                                                                                                                                                                                          complete cds
                                                                                                                                                                                                                                                                                                     (clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3'UTR
BASE COUNT
ORIGIN
                  В
                                               QY
                                                                                  В
                                                                                                                 QΥ
                                                                                                                                                       DЬ
                                                                                                                                                                                        Qy
                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                γ
                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 1184; Conserv
                  794
                                                                                    734
                                                                                                                     645
                                                                                                                                                             674
                                                                                                                                                                                              585
                                                                                                                                                                                                                               614
                                                                                                                                                                                                                                                                  525
                                                                                                                                                                                                                                                                                                     554
                                                                                                                                                                                                                                                                                                                                    465
                                                                                                                                                                                                                                                                                                                                                                        494
                                                                                                                                                                                                                                                                                                                                                                                                           405
                                                                                                                                                                                                                                                                                                                                                                                                                                            434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      314
                                                   705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            105
                CACTTCAGAGGAGAACAAGAGAGAGCTGGGCACTCTCTTGTCTTGTCTAGAGTACAACTT
                                                                                                                                                                                 tacttcagaagagaaacaagagaagctgggaactctcttcttctccttagaatacaactt
                                                                                                                                                                                                                                                      CCCCAAAACCAACCCCAAAGCTGGCAGCTCTTCTGATCTGGAAAATGTCACCCCAAAGCT
                                                                                                                                                                                                                                                                                                                        - tcccaaaaccaacctcaaacctggcagtccttctgatctggagaatgcaaccccgaagct 524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CSSGGAGAAGCATTTGTGCTGAACATCAAGGAAGCCCAGGGCTTACCAGCCATGGATGA
                                                                                                                                                                                                                               CTTTCCGGAGACGGAAAAGGAGGCCGTCTCCCCTGAGAGCTTGAAGTCCAGCACTTCCCT
                                                                                                                                                                                                                                                                                                                                                                                            AAACCTAAGTAGCAAAAAGAAGTTTGGAGGAGATGACAAGAGTGAAGCAAAGCGTAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aaacctaaatagcaaaaagaagtttggagcagatgataaaaatgaagtaaagaataagcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAACAAGACTCCTCCATACAAGTTTGTGCACGTGCTTAAAGGAGTTGATATCTACCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   taacaagactcctccatacaagtttgtgcatgtgcttaagggagttgatatttaccctga 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTGGTCTTCACTGTCTCTCTTTGCCTGGATCTGCTGCCAGAGAAGATCCGCTAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACCAGCCGCGTGGAATTCGATGAAATTCCCACAGTGGTGGGCATCTTCAGTGCTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         caccagccgggaagaatttgatgaaatccccacagtggtggtgggatcttcagtgcatttgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCCTGGAGTTCTTTCAGCACCTCGGACAGAGCACGCAG-AAAACATGGCTCCTATCAC
                                                                                                                                                                                                                                                                                                                                                                        AGCTTTGCCTAACCTTTCCCTGCACCTTGATCTCGAGAAGCGAGACCTCAATGGCAATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/product="synaptotagmin IV"
/product="synaptotagmin IV"
/protein_id="naA67327.1"
/db_xref="g1:598377"
/db_xref="g1:598377"
/translation="MAPITTSRYEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRRSAK
/translation="MAPITTSRYEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRRSAK
SNKTPPYKFVVLKGVDIYPENLSSKKKFGGDDKSEAKRKAALPNLSLHLDLEKRDLN
GNFPKTNPKAGSSSDLENVTPKLFPETEKEAVSPESLKSSTSLTSEEKQEKLGTLFLS
LEYNEEKKAFVVNLKEAGGLPAMDEQSMTSDPYIKMTILPEKKHKVTRVLKKTLDFV
TDEMTEKKAFVVNLKEAGGLPAMDEQSMTSDPYIKMTILPEKKHKULRKTLDFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:10116"
/cell_line="PC12"
/clone="PCR2"
/clone_lib="lambda ZAP PC12+ library (L. Vician and Lim)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LGATAEGSGGGHWKEICDFPRRQIAKWHMLCDG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FIDETETEYGYPYPHIOELSLHETYLSEDIFESEDDVIGEVLYPLSGIELSDCKMLMYRE
IIKRNAKKSSGRELLVSCYOSTTYNLTTYVVLKARHLPKSDVSGLSDYYVKVNLYHA
KKRISKKKTHVKKCTPNAVFNELFVFDIPCESLEEISVEFLVLDSERGSRNEVIGRLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tissue_type="pheochromacytoma"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .1576
94 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1054.2; DB 10; Length 1576;
Pred. No. 4.1e-193;
0; Mismatches 198; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                384 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   378 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                433
                                                                                                                                                                                                                               673
                                                                                                                                                                                                                                                                  584
                  853
                                                                                                                                                                                                                                                                                                   613
                                                                                                                                                                                                                                                                                                                                                                                                                                            493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H.K.
```

ŗ

DЬ

1542

1485

δÃ В δÃ 뫄 δÃ В ρy Дb δÃ Ъ Š Вþ QΥ дb δÃ 밁

1425 1482 1362 1245 1302 1185 1242

1422

1182

1122

VERSION KEYWORDS SOURCE

RESULT RATRSI

LOCUS

g δÃ DЬ Qy В QΥ

1659

1602

REFERENCE

AUTHORS

TITLE

Qγ

Š

```
RESULT 1
BC004291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ър
                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                LOCUS
                                                                                                             REFERENCE
                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                 DEFINITION
                                                                               AUTHORS
TITLE
                                                                                                                                                         ORGANISM
      REMARK
                                                                                                                                                                                                                                                                                                                                                                        1485
                                                                                                                                                                                                                                                                                                                                                                                                      1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1094
                                                                                                                                                                                                                                                                                                                                          1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   825
                                                                                                                                                                                                                                                                                              12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTC
                                                                                                                                                                                                                                                                                                                                                                                                 ttc 1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gaaagagatctgtgactaccccaggagacaaattgccaagtggcacgtgctctgtgatgg 1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgaggtaatcgggcagttagtcttgggtgcagcagcagaaggaactggtggagagcactg 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9ggccttgaagatataagtgttgaattttttggtttttggattctgaaagggggtcccgaaa 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaagaaatgcacccccaatgcagtgttcaatgagctgtttgtcttttgatattccttgtga 1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctatgtcaaagtgaacctgtaccatgccaaaaagagaatctccaagaagaagactcatgt 1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTGGTTGTCTTAAAAGCGCGGCACCTACCGAAATCTGATGTGTCTGGACTTTCAGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tgtggttgtcttaaaagctcgacatctgcctaaatctgatgtgtccggactttcagatcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ctatgggataccctacacccaaatccaagaattggccttgcacttcacaattttgagttt 884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGGAGATCTGTGACTTCCCCCAGGAGACAAATTGCTAAGTGGCATATGCTCTGTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGTCTTGAAGAATAAGTGTTGAATTTTTAGTTTTTGGATTCTGAAAGGGGATCCCGAAA 1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAAAAGTGCACTCCCAACGCAGTGTTCAACGAACTGTTTGTCTTTGATATTCCTTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTACGTCAAAGTGAACCTGTACCATGCCAAGAAGAGAATCTCTAAAAAAGAAGACTCACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGACAGGTTCTCAAGAGATGATGTCATTGGAGAAGTCCTCGTTCCTCTTTCAGGGATTGA 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | tgacaggttttcaagagatgatatcattggggaagttctaattcctctctcggggaattga 944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTATGGGGTCCCTTATCCCCACATCCAAGAGCTGTCCCTGCACTTCACCGTCCTGAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agtgaaaactagagtgctgagaaaaaccttggatccagcttttgatgagacctttacatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTGAAAACCAGAGTGCTGAGGAAGACGCTGGACCCCGTGTTTGACGAAACCTTCACATT
               Strausberg,R.
Strausberg,R.
Direct Submission
Submitted (01-MAR-2001) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Gene Collection (MGC), Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                BC004291 2950 bp
Homo sapiens, Similar
IMAGE:3621175, mRNA, o
USA
NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 2950)
                                                                                                                                                       Homo sapiens
                                                                                                                                                                                       MGC
                                                                                                                                                                                                   BC004291.1 GI:13279139
                                                                                                                                                                                                                                                              BC004291
                                                                                                                                                                         numan
                                                                                                                                                                                                                                                                                                                                          1576
                                                                                                                                                                                                                                 r to synaptotagmin 11, clone complete cds.
                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                MGC:10881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1513
```

```
Q
                                                                                               멍
                                                                                                                                          Ωy
                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                         DЪ
                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
  411
                                                                                               351
                                                                                                                                                                                            291
                                                                                                                                                                                                                                         252
                                                                                                                                                                                                                                                                                         231
                                                                                                                                                                                                                                                                                                                                        198
                                                                                                                                                                                                                                                                                                                                                                                        171
CAAAGTGCGGAGAGACAAAGATGGTCCTGGGAGGGAAGGTGGACGTAGGAACCTGTTGGT
                                        agcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaattcattgcatct 431
                                                                                                                      CTGGTCATGCTGCCACCAGCAGGCAGAGAAGAAGCACAAGAACCCACCATACAAGTTTAT
                                                                                                                                                                                                                                    atggatctgctgtcagagaaaatcatccaagtctaacaagactcctccatacaagtttgt 311
                                                                                                                                                                                                                                                                                         agtggtggggatcttcagtgcatttggcctggtcttcacagtctctct----ctttgc
                                                                                                                                                                                                                                                                                                                                                                                        CTCTGATTACGACATGGCTGAGATCACCAATATCCGACCTAGCTTTGATGTGTCACCGGT 230
                                                                                                                                                                                                                                                                                                                                                                                                                 cacgcagtaaaaaatggctccgatcaccaccagccgggaagaatttgatgaaatccccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     745;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Clone distribution: MGC clone distribution information can wo through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl. through the I.M.A.G.E. Town: 19
Series: IRAL Plate: 13 Row: j Column: 19
This clone was selected for full length sequencing because it this clone was selected for full length sequencing because it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Steven Jones, Jennifer Asano, Ian Bosdet, Yaron Butterfield, Susanna Chan, Readman Chiu, Chris Fjell, Erin Garland, Ran Guin, Letticia Hislao, Martin Krzywinski, Reta Kutsche, Oliver Lee, Soo Sen Lee, Victor Ling, Carrie Mathewson, Candice McLeavy, Steven Ness, Pawan Pandoh, Anna-Liisa Prabhu, Parvaneh Saeedi, Jacqueline Schein, Duane Smailus, Michael Smith, Lorraine Spence, Jeff Stott, Michael Thorne, Miranada Tsai, Natasja van den Bosch, Jill Vardy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Louis M. Staudt, M.D., Ph.D.
cDNA Library Preparation: Rubin Laboratory
cDNA Library Arrayed by: The I.M.A.G.E. Consortium
DNA Sequencing by: Genome Sequence Centre,
BC Cancer Agency, Vancouver, BC, Canada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 George Yang, Scott Zuyderduyn, Marco Marra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               info@bcgsc.bc.ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  מ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /protein_id="AAH04291.1"
/db_xref="GI:13279140"
/db_xref="GI:13279140"
/translation="MAEITNIRPSFDVSPVVAGLIGASVLVVCVSVTVFVWSCCHQQA
EKKHKNPPYKFTHMLKGISIYPETLSNKKKIIKVRRDKDGFGREGGRRNLLVDAAEAG
LLSRDKDPRGPSSGSCIDQLPIKMDYGEELRSPITSLTPGESKTTSPSSPEEDVMLGS
LTFSVDYNFPKALLVVTIQEAHGLPVMDDQTGGSDPYIMMTILDBKRHRVKTRVLKKT
LDPVFDETFTFYGIPYSQLQDLVLHFILVLSFDRFSRDDVIGSEWVPLAKVVDESTGKVD
LDPVFDETFTFYGIPYSQLQDLVLHFILVLSFDRFSRDDVIGSWMPVPLAKVDESTGKVD
LDRVIGRRIJKKGTHVKKCTLMPIFNSFIYDIPDLLPDISIEFLVIDEDRTTKNEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
/product="Similar to synaptotagmin
/product="AAH04291.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="Vector: pOTB7"
184. .1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="Lymph, Burkitt lymphoma"
/clone_lib="NIH_MGC_8"
/lab_host="DH10B-R"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VGRLILGAHSVTASGAEHWREVCESPRKPVAKWHSLSEY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="MGC:10881 IMAGE:3621175"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 363.6; L
Pred. No. 3.8e-
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               704 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               748 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .8e-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                            371
                                                                                                                                                                                                                                                                                         290
                                                                                                                                                                                                                                                                                                                                                                                                                                     197
                                                                                                                                                                                                                                                                                                                                        251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.
```

```
RESULT 13
AK027540
  DEFINITION
                                                                                                                            1263
                                                                                                                                                                                                                                                                                                                                                                             1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1086
                                                                                                                                                                                                                                                                                              1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    471
                                                                                                                                                                                                           GATCCTGGGGGCACACAGTGTCACAGCCAGTGGTGCTGAACACTGGAGAGAGGTCTGCGA
                                                                                                                                                                                                                                   agtcttgggtgca---gcagcagaaggaactggtggagagcactggaaagagatctgtga 1379
                                                                                                                                                                                                                                                                                            CATCGAGTTCCTCGTTATCGACTTCGATCGCACCAAGAATGAGGTGGTGGGGAGGCT
                                                                                                                                                                                                                                                                                                                  tgttgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcagtt 1322
                                                                                                                                                                                                                                                                                                                                                                             tgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatataag 1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTACTACGGCAGAAAGCGCATTGCCAAGAAGAAACCCCATGTGAAGAAGTGCACTTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9taccatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcacccccaa 1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        acatotgootaaatotgatgtgtooggactttoag---atocotatgtoaaagtgaacot 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gatctctctctgctatcagtccaccacaaacactctaactgtggttgtcttaaaagctcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aatgaatagagagatcatcaagagaaatgttaggaagtcttcaggacggggtgagttact 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aatccaagaattggccttgcacttcacaattttgagtttttgacaggttttcaagagatga 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aaaaaaccttggatccagcttttgatgagaccttttacattctatgggataccctacaccca 845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    atatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagtgctgag 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACACTTGCCGAAGATGGATATCACCGGTCTCTCAGGTAATCCTTATGTCAAGGTGAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTGTCTCTGTCATATCAGCCTGTGGCACAGAGAATGACAGTGGTGGTCCTCAAAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTGACCAGGGACATCATCAAAAGGAATATCCAGAAGTGCATCAGCAGAGGGGAGCTCCA 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCATTGGCGAGGTCATGGTGCCACTGGCAGGGTTGGACCCCCAGCACAGGCAAGGTACA 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tatcattggggaagttctaattcctctctcgggaattgaattatctgaaggaaaaatgtt 965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGCAGGACCTGGTGCTGCACTTCCTTGTCCTCAGCTTTGACCGCTTCTCTCGGGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGACCCTGGACCCTGTGTTTGACGAGACCTTCACCTTCTATGGCATCCCCTACAGCCA 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTACATCAAAATGACCATCCTTCCTGACAAACGGCATCGGGTGAAGACCAGAGTGCTGCG 830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACAATCCAGGAGGCCCACGGGCTGCCAGTGATGGATGACCCAGGACCCAGGGATCTGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgaccttctgaccc 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGCTAGGATCCCTCACCTTCTCAGTGGACTATAACTTCCCGAAAAAAGCCCTGGTGGT 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gaagctgggaactctcttcttctccttagaatacaacttcgagagaaaagcatttgtggt 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACAAGCCTGACCCCTGGGGAGAGCAAAACCACCTCTCCATCATCTCCAGAGGAGGATGT 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ttcccctgagagtttaaagtccag-----cacttcccttacttcagaagagaaacaaga 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCTTGTATAGACCAATTACCCATCAAAATGGACTATGGGGAAGAACTAAGGAGCCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tccttctgatctggagaatgcaaccccgaagctctttttagaaggggaaaaagagtcagt 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGACGCAGCAGAGGCTGGCCTAAGCCGAGACAAAGATCCCAGGGGGCCCTAGCTCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AK027540 2315 bp mRN
Homo sapiens cDNA FLJ14634
                       mRNA
  fis, clone
NT2RP2001081, moderately
                       15-MAY-2001
                                                                                                                                                                                                           1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      770
                                                                                                                                                                                                                                                                                                                                                                             1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1085
                                           B
                                                                            Qy
                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
Ωy
                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                        Query Match
Best Local S
Matches 744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                             243
                                                                                   198
                                                                                                                         183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                  585
```

δÃ 밁 δÃ ₽ Qy В Qγ 망 QΥ рь Qy 망 δÃ д Ωy Дb δÃ D Qy В Qy 밁 Qy В Qy Дb γQ В δÃ DЪ δÃ 망

```
252 atggatctgctgtcagagaaaatcatccaagtctaacaagactcctccatacaagtttgt 311
                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
nes 744; Conserv
                                                                                                                                                                                                                                                                        cacgcagtaaaaaatggctccgatcacccaccagccgggaagaatttgatgaaatccccac 197
                                                                                   agtggtggggatcttcagtgcatttggcctggtcttcacagtctctct-----ctttgc 251
                                                                                                                                                                                                                                CTCTGATTACGACATGGCTGAGATCACCAATATCCGACCTAGCTTTGATGTGTCACCGGT 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (sites)
1 (sites)
1 (sites)
1 (sites)
1 (sogai,T., Ota,T., Hayashi,K., Sugiyama,T., Otsuki,T., Suzuki,Y., Nishikawa,T., Nagai,K., Sugano,S., Shiratori,A., Sudo,H., Nishikawa,T., Nagai,K., Sugawara,H., Kondo,H., Kaku,Y., Kodaira,H., Kondo,H., Sugawara,M., Takahashi,M., Chiba,Y., Ishida,S., Murakawa,K., Ono,Y., Takiguchi,S., Wanahabe,S., Kimura,K., Murakawa,K., Ishii,S., Kawai,Y., Saito,K., Yamamoto,J., Wakamatsu,A., Nakamura,Y., Nagahari,K., Masuho,Y., Ninomiya,K. and Iwayanagi,T. NEDO human cDNA sequencing project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Isogal,T. and Ocsukl,T.

Isogal,T. and Ocsukl,T.

Direct Submission

Direct Submission

Submitted (10-MAY-2001) Takao Isogal, Helix Research Institute,

Submitted (10-MAY-2001) Takao Isogal, Helix Research Institute,

Genomics Laboratory; 1532-3 Yana, Kisarazu, Chiba 292-0812, Japan

(E-mail:genomics@hri.co.jp, Tel:81-438-52-3951, Fax:81-438-52-3952)

NEDO human cDNA sequencing project supported by Ministry of

Economy, Trade and Industry of Japan; CDNA full insert sequencing:

Research Association for Biotechnology; CDNA library construction,

5'-& 3'-end one pass sequencing and clone selection: Helix

8'-& 3'-end one pass sequencing and clone selection: Helix

Research Institute (supported by Japan Key Technology Center etc.)

university of Tokyo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
Eukaryota; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               oligo capping; fis (full insert sequence).
Homo sapiens teratocarcinoma cell_line:NT2 cDNA to mRNA.
clone_lib:NT2RP2 clone:NT2RP2001081.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       similar to SYNAPTOTAGMIN IV
AK027540
AK027540.1 GI:14042289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LTRDIIKRNIOKCISRGELOVSLSYOPVAORMTVVVLKARHLEKMDITGLSONPYKKV
NVYYGRKRIAKKKTHYKKCTLNPIENESFIYDIFTDLLPDISIEFLVIDFDRTTKNEV
VGRLILGAHSVTAGGAEHMREVCESPRKSPVAKMHSLSEY"
3 600 c 570 g 560 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /protein_id="bab55186.1"
/db_xref="GI:4042290"
/db_xref="GI:4042290"
/db_xref="GI:4042290"
/ctanslation="MabITURERSEDVSPVVAGLIGASVLVVCVSVTVEVWSCCHQQA
EKKHKSPPYKFIHMLKGISIYPETLSNKKKIIKVRRDKDGPGREGGRRNLLVDAAEAG
EKKHKSPPYKFIHMLKGISIYPETLSNKKKIITFORGSKTFORGSKTPSSFEEDVMLGS
LLSROKDPRGPSSGCIDQLPIKMDYGEELRSPITSLFDGESKTFSPSSFEEDWMLGS
LLSROKDPRGPSSGCIDQLPICAHGLPVLDSDPRESRDDVLGEVMVPLAGADPSTGKVQ
LDPVFDETFTFYGIPYSQLQDLVLHFLVLSTDRFSRDDVLGEVMVPLAGADPSTGKVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="unnamed protein product"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /cell_type="teratocarcinoma"
/clone_lib="NY12RP2"
/note="cloning vector: pME18SFL3-mRNA from NT2 neuronal precursor cells after 2-weeks retinoic acid (RA) induction."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="NT2RP2001081"
/cell_line="NT2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                 9.3%;
                                                                                                                                                                                                                                                                                                                                                                                  Score 362; DB 9;
Pred. No. 7.6e-60;
0; Mismatches 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2315;
                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                      4.
```

```
Qy
                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                         Qy
                                                                                       밁
                                                                                                            Q
                                                                                                                                       DЬ
                                                                                                                                                                                           В
                                                                                                                                                                                                             ρy
                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
             Ş
                                      밁
                                                                                                                                          1203
                                                                                                                                                                   1143
               1323
                                                                                                                  1203
                                                                                                                                                                                             1143
                                                                                                                                                                                                                    1086
                                                                                                                                                                                                                                             1083
                                                                                                                                                                                                                                                                      1026
                                                                                                                                                                                                                                                                                                1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              423
                                                                                                                                                                                                                                                                                                                        966
                                                                                                                                                                                                                                                                                                                                                  963
                                                                                                                                                                                                                                                                                                                                                                                                  903
                                                                                                                                                                                                                                                                                                                                                                                                                          846
                                                                                                                                                                                                                                                                                                                                                                                                                                                   843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        312
                                                                                                                                                                                                                                                                                                                                                                         906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 303
                                                                                                                                                                                                                                                                                                                                                                                                              aatccaagaattggccttgcacttcacaattttgagtttttgacaggttttcaagagatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agtcttgggtgca---gcagcagaaggaactggtggagagcactggaaagagatctgtga
                                                                                                                                          CTACTACGGCAGAAAGCGCATTGCCAAGAAGAAACCCATGTGAAGAAGTGCACTTTGAA
                                                                                                                                                    gtaccatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcaccccaa
                                                                                                                                                                                                       acatctgcctaaatctgatgtgtccggactttcag---atccctatgtcaaagtgaacct
                                                                                                                                                                                                                                                        gatctctctctgctatcagtccaccacaaacactctaaactgtggttgtcttaaaagctcg
                                                                                                                                                                                                                                                                                                            aatgaatagagagatcatcaagagaaatgttaggaagtcttcaggacggggtgagttact 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGACCCTGGACCCTGTGTTTGACGAGACCTTCACCTTCTATGGCATCCCCTACAGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               aaaaaccttggatccagcttttgatgagacctttacattctatgggataccctacaccca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                caatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctctgaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGCTAGGATCCCTCACCTTCTCAGTGGACTATAACTTCCCGAAAAAAGCCCTGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tccttctgatctggagaatgcaaccccgaagctctttttagaaggggaaaaaagagtcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAAGTGCGGAGAGACAAAGATGGTCCTGGGAGGGAAGGTGGACGTAGGAACCTGTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaattcattgcatct 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCACATGCTCAAAGGCATCAGCATATACCCAGAGACCCTCAGCAACAAGAAGAAAATCAT 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaaaagaagtttgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATCGAGTTCCTCGTTATCGACTTCGATCGCACCACCAAGAATGAGGTGGTGGGGAGGCT
                                                   tgttgaatttttggtttttggattctgaaagggggtcccgaaatgaggtaatcgggcagtt
                                                                                                      tgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatataag
                                                                                                                                                                                           ACACTTGCCGAAGATGGATATCACCGGTCTCTCAGGTAATCCTTATGTCAAGGTGAACGT
                                                                                                                                                                                                                                            GGTGTCTCTGTCATATCAGCCTGTGGCACAGAGAATGACAGTGGTGGTCCTCAAAGCCAG
                                                                                                                                                                                                                                                                                             ACTGACCAGGGACATCATCAAAAGGAATATCCAGAAGTGCATCAGCAGAGGGGAGCTCCA
                                                                                                                                                                                                                                                                                                                                              GCTGCAGGACCTGGTGCTGCACTTCCTTGTCCTCAGCTTTGACCGCTTCTCTCGGGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACAATCCAGGAGGCCCACGGGCTGCCAGTGATGGATGACCAGACCCAGGGATCTGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gaagctgggaactctcttcttcttccttagaatacaacttcgagagaaaagcatttgtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACAAGCCTGACCCCTGGGGAGAGCAAAACCACCTCTCCATCATCTCCAGAGGAGGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCTTGTATAGACCAATTACCCATCAAAATGGACTATGGGGAAGAACTAAGGAGCCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGACGCAGCAGAGGCTGGCCTAAGCCGAGACAAAGATCCCAGGGGGCCTAGCTCTGG
                                                                                       665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              605
                                      1382
                                                                                                                                                                                                                    1142
                                                                                                                                                                                                                                                                     1085
                                                                                                                                                                                                                                                                                              1082
                                                                                                                                                                                                                                                                                                                                                1022
                                                                                       1322
                                                                                                                                                                  1202
                                                                                                                                                                                           1202
                                                                                                                                                                                                                                            1142
                                                                                                                                                                                                                                                                                                                                                                         965
                                                                                                                                                                                                                                                                                                                                                                                                                         905
                                                                                                                                                                                                                                                                                                                                                                                                                                                   902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              482
              1379
                                                                                                                                                                                                                                                                                                                                                                                                 962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        662
```

```
DEFINITION
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 1
AF000423
LOCUS
                      QΥ
                                                              В
                                                                                             Qγ
                                                                                                                                      Дb
                                                                                                                                                                           Qy
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                         BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                 Query Match 8.9
Best Local Similarity 56.9
Matches 742; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1443
                                                                                                                                                                                                                                                                                                                                                                                                                         COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1383
                      312
                                                              350
                                                                                                                                          290
                                                                                                                                                                                 198
                                                                                                                                                                                                                         230
                                                                                                                                                                                                                                                            138
gcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaaaagaagtttgg
                                                                                  atggatotgotgtcagagaaaatcatocaagtctaacaagactcotcoatacaagtttgt 311
                                                                                                                                                                                                                                       cacgcagtaaaaaatggctccgatcaccaccagccgggaagaatttgatgaaatccccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCCCCCGCAAGCCTGTGGCCAAGTGGCACAGTCTGAGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCCTGGGGGCACACAGTGTCACAGCCAGTGGTGCTGAACACTGGAGAGAGGTCTGCGA
                                                              GTGGACATGCTGCCACCAGCAGGCGGGAGAAGAAGCACAAGACCCCCACCGTACAAGTTTAT
                                                                                                                                                               CTCTGATTACAACATGGCTGAGATCACAAATATACGCCCCCAGCTTTGATGTGTCACCAGT 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctaccccaggagacaaattgccaagtggcacgtgctctgtga
                                                                                                                                          Rattus no
AF000423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
Submitted (20-APR-1997) Molecular Genetics, UT Southwestern Medical Submitted (20-APR-1997) Molecular Genetics, UT Southwestern Medical Center, 5323 Harry Hines Blvd., Dallas, TX 75235, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Norway
Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   von Poser,C., Ichtchenko,K., Shao,X., Rizo,J. and Sudhof,T.C. The evolutionary pressure to inactivate: A subclass of synaptotagmins with an amino acid substitution that abolishes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VOn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            calcium binding
J. Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF000423.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biol. Chem. (1997) In press (bases 1 to 2426)
n Poser,C. and Sudhof,T.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 2426)
                                                                                                                                                                                                                                                                                                                                                                                                                         616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23 2426 bp mRNA
norvegicus synaptotagmin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                                                                                                                                                                                                       VYYGRKRIAKKKTHVKKCTLNPIFNESFIYDIPTDLLPDISIEFLVIDFDRTTKNEVV
GRLILGAHSVTTSGAEHWREVCESPRKPVAKWHSLSEY"
a 610 c 628 g 572 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="synaptotagmin x1"
/product="synaptotagmin x1"
/protchn_id="AAB58344.1"
/protchn_id="AAB58344.1"
/db_xref="g1:2130632"
/translation="MAEITNIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTCCHQQA
/translation="MAEITNIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTCCHQQA
EKHKTPPYKFIHMLKGISIYPETLSNKKEIIKVRRDKDGSHRESGRGNLLVNAESGL
LSHDRDDRGFSPASCIDQLFIKDDYGELERSPWTSLTPGESKFPYSPSSEEDVMLGSL
LSHDRDDRGFSSACIDQLFICABHCLFVNDGQTQGSDFYIKMTILPDKRHRVKTRVLRKT
TFSUTVNTFFKKALVVTTQEAHGLFVNDGQTQGSDFYIKMTILPDKRHRVKTRVLRKTL
DPVFDETFTFYGIPYSQLQDLVLHFLVLSFDRFSRDDVIGEVMVPLAGVDPTVKVN
TRDIIKRNIQKCISRGELQVSLSYQPVAQRMTVVVLKARHLFRADITGLSGNFYVKVN
TRDIIKRNIQKCISRGELQVSLSYQPVAQRMTVVVLKARHLFRADITGLSGNFYVKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C2-domains"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      membrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Rattus norvegicus"
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="membrane trafficking
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="brain"
                                                                                                                                                                                                                                                                                                                      8.9%;
56.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:2130631
                                                                                                                                                                                                                                                                                                     0,:
                                                                                                                                                                                                                                                                                                   Score 346.2; DB 10; Pred. No. 8.4e-57; 0; Mismatches 538;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      with single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XI mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein; sytXI;
e transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ROD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complete cds
                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sytXI; intrinsic
mbrane region and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1997
                                                                                                                                                                                                                                                                                                                                            2426;
                                                                                                                                                                 -ctttgc
                                                                                                                                                                                                                                                                                                     23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   region
                                                                                                                                                                                                                                                                                                     Gaps
                                                              409
                                                                                                                                          349
                                                                                                                                                                                 251
                                                                                                                                                                                                                                                              197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        two
                                                                                                                                                                                                                                                                                                     <u>ح</u>
```

```
actaccccaggagacaaattgccaagtggcacgtgctctgtga 1421
        AGAGTCCCCGCAAGCCTGTAGCCAAGTGGCACAGTCTGAGCGA 1528
                                                                                                    TGATCTTGGGGGCACACAGTGTCACAACCAGTGGTGCAGAACACTGGAGAGAGGTGTGCG 1485
                                                                                                                                   tagtcttgggtgcagcagcagaaggaac---tggtggagagcactggaaagagatctgtg 1378
                                                                                                                                                                                                     GCATCGAGTTCCTTGTCATTGACTTCGATCGTACTACTAAGAATGAGGTGGTAGGGAGGC
                                                                                                                                                                                                                                 gtgttgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcagt 1321
                                                                                                                                                                                                                                                                                                                                   atgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatataa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gaaaaaccttggatccagcttttgatgagacctttacattctatgggataccctacaccc 844
                                                                                                                                                                                                                                                                                                   tgtaccatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcacccca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gacatctgcctaaatctgatgtgtccggactttcag---atccctatgtcaaagtgaacc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgatctctctctgctatcagtccaccacaacactctaactgtggttgtcttaaaagctc 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          atatcattggggaagttctaattcctctctcgggaattgaattatctgaaggaaaaatgt 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aaatccaagaattggccttgcacttcacaattttgagtttttgacaggtttttcaagagatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     catatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagtgctga 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agaagctgggaactctcttcttctcccttagaatacaacttcgagagaaaagcatttgtgg 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agtcagtttcccctgagagtttaaagtccagcacttcccttacttcagaagagaaacaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ctggcagtccttctgatctggagaaatgcaaccccgaagctctttttagaaggggaaaaag
                                                                                                                                                                                                                                                                                                                                                                                               TCTACTACGGCAGAAAACGCATTGCCAAGAAGAAACTCATGTAAAGAAGTGCACTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACACTTGCCGAAGATGGATATCACCGGTCTCTCAGGTAATCCTTATGTCAAGGTGAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGTATCTCTGTCATACCAGCCCGTCGCACAGAGAATGACAGTCGTGGTCCTCAAAGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGTCATCGGGGAGGTCATGGTGCCCTTGGCTGGAGTGGACCCCAGCACAGGCAAGGTTC 1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCTACAGGACCTGGTGCTGCACTTCCTTGTGCTCAGCTTTGATCGCTTCTCTCGGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAAGACCCTGGACCCCGTGTTTGATGAGACCTTCACCTTCTACGGCATTCCCTACAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTACATCAAAATGACCATTCTTCCTGACAAGCGGCATCGAGTGAAGACCCGGGTGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATGCTAGGGTCCCTTACCTTCTCGGTGGACTACAACTTTCCCAAGAAAGCTCTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCCTGACCCCCGGTGAAAGCAA----GCCCACCTCCCCATCATCGCCAGAGGAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGTATAGACCAGTTACCCATCAAAAGAGACTATGGGGAAGAACTGAGGAGCCCCATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAATGCGGAGTCTGGCCTGAGCCATGACAGGGGATCCCAGAGGGCCCTAGCCCTGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAAGTTCGGAGGGACAAAGATGGTTCTCATAGGGAAAGTGGACGAGGGAACCTGTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agcagatgataaaaatgaag-----taaagaataagccagctgtgccaaagaattcat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCATATGCTGAAAGGCATTAGCATCTACCCAGAGACCCTCAGCAACAAGAAGGAAATCAT
                                                                                                                                                                                                     1425
                                                                                                                                                                                                                                                                                                                                                    1261
                                                                                                                                                                                                                                                                                                                                                                                                                                               1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
SOURCE
ORGANISM
                         Ωy
                                                                                                                  QΥ
                                                                                                                                                                        DЬ
                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
REFERENCE
AUTHORS
                                                                             B
                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AB026808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 8.5
Best Local Similarity 57.1
Matches 737; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                             181
                                                                                                                                                                           121
                                                                                                                                                                                                                            265
                                                                                                                                                                                                                                                                                                                          211
                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                        ۲
     aatgaag-----
                                                                                                                                                                                                                                                                                                      atggctccgatcaccaccagccgggaagaatttgatgaaatccccacagtggtggggatc
                                                                                                                                                                                                                                                                                                                                                                        ATGGCTGAGATCACAAATATACGCCCCAGCTTTGATGTGTCACCGGTAGCGGCTGGCCTC
                                                                          GGCATTAGCATCTACCCAGAGACCCTCAGCAACAAGAAGAAAATCATCAAAGTTCGGAGA
                                                                                                                     ggagttgatatttaccctgaaaacctaaatagcaaaaagaagtttggagcagatgataaa
                                                                                                                                                                           cagagaaaatcatccaagtctaacaagactcctccatacaagtttgtgcatgtgcttaag 324
                                                                                                                                                                                                                                                                         ATCGGGGCCTCCGTGCTGGTGTGTGTTTCAGTGACTGTCTTTGTGTGGACGTGCTGC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fukuda,M.

Direct Submission

Direct Submission

Submitted (27-APR-1999) to the DDBJ/EMBL/GenBank databases.

Submitted (27-APR-1999) to the DDBJ/EMBL/GenBank databases.

Mitsunori Fukuda, RIKEN Brain Science Institute, Developmenta

Mitsunori Fukuda, RIKEN Brain Science Institute, Developmenta

Metrobiology Laboratory; 2-1 Hirosawa, Wako, Saitama 351-0199

Japan (E-mail:mnfukuda@brain.riken.go.jp, Tel:81-48-467-9745)

Fax:81-48-467-9744)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fukuda,M., Kanno,E. and Mikoshiba,K. Conserved N-terminal cysteine motif is essential for homo- and heterodimer formation of synaptotagmins III, V, VI, and X J. Biol. Chem. 274 (44), 31421-31427 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (strain:ICR) Adult Cerebellum cDNA to mRNA mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AB026808 1293 bp mRNA ROD 27-OCT-1999
Mus musculus mRNA for synaptotagmin XI, complete cds.
AB026808 1 GI:6136793
synaptotagmin XI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 1293)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/procdict="$ynaptotagmin x1"
/procdict="$ynaptotagmin x1"
/procdict="$ynaptotagmin x1"
/procdict="$ynaptotagmin x1"
/db_xref="G1:6136794"
/db_xref="G1:6136794"
/translation="$MABEJT$IIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTGCHQQA
/translation="$MAEJT$IIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTGCHQQA
/translation="$MAEJT$IIRPSFDVSPVAAGLIGASVLVVCVSSPEEDVMLGSL
LSHDKDPRGPSPASCMDQLPIKRDYGEELRSPWTSLTPGESKPTSPSSPEEDVMLGSL
LSHDKDPRGPSPASCMDQLPIKRDYGEELRSPWTSLTPGESKPTSPSSPEEDVMLGSL
TFSVDYNPEKALVVTIQEAHGLEVMDDGTQGSDSYTIKTILDPKRHRVKTRVLKKTL
DPVPDETFTFYGIPYSQLQDLVLHFLVLSFDRFSRDDVIGESWAPLASVDBSTKVQL
TRDIIKRNIGKCISRGELQVSLSYQPVAQRMTVVVLKARHLPKMDITGLSGNPYVKVN
VYYGRKRIAKKTHYKKCTLNPVENESFIYDIFTDLLDDISIEFLVIDFDRTTKNEVV
GRLILGAHSYTTSGAEHWREVCESPRKPTAKWHSLSEX"
GRLILGAHSYTTSGAEHWREVCESPRKPTAKWHSLSEX"
337 a 347 c 346 g 263 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="Cerebellum"
1. .1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Mus musculus"
/strain="ICR"
/db_xref="taxon:10090"
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
taaagaataagccagctgtgccaaagaattcattgcatctggatct 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 346; DB 10;
Pred. No. 9.1e-57;
0; Mismatches 530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1293;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Developmental tama 351-0198,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                          384
                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
```

δÃ

дЬ Ş Дb QY 밁 δÃ В Qy В δÃ DЬ Qy дb Qy ф γQ Ъ Qy Вb Qy dd QΥ В Ωy Вþ Qy Вb QΥ DЪ δõ 망

> 1066 1025 1126 1085 1186

1006 965

886 845 946 826

766 725

785

665

650

485 590 545

706

530

470 425 410

Db Db

```
Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                  Qγ
                                                                                                                                       Qy
                                                                                                                                                              Дδ
                                                                                                                                                                                Qy
                                                                                                                                                                                                      В
                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                              Вр
                                                                                                                                                                                                                                                                γQ
                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                     δÃ
                                         밁
                                                         Qy
                                                                                 Вþ
                                                                                                                       DЬ
  B
                                          1197
                                                                                  1137
                                                                                                                        1077
                                                                                                                                           1215
                                                                                                                                                                1017
                                                                                                                                                                                   1155
                                                                                                     1275
                                                                                                                                                                                                                            1098
                                                                                                                                                                                                                                                                  1038
                                                                                                                                                                                                        957
                                                                                                                                                                                                                                               897
                                                                                                                                                                                                                                                                                       837
                                                                                                                                                                                                                                                                                                         978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                             777
                                                                                                                                                                                                                                                                                                                                                918
                                                                                                                                                                                                                                                                                                                                                                   717
                                                                                                                                                                                                                                                                                                                                                                                      858
                                                                                                                                                                                                                                                                                                                                                                                                          657
                                                                                                                                                                                                                                                                                                                                                                                                                             798
                                                                                                                                                                                                                                                                                                                                                                                                                                                 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 GACAAAGATGGCCCTCGGAGGGAAAGTGGACGAGGGAACCTGTTAATAAACGCGGAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGAGAGCAAGCC----CACCTCCCATCCTCGCCAGAGGAAGACGTGATGTTAGGCTC
atctgatgtgtccggactttcag---atccctatgtcaaagtgaacctgtaccatgccaa 1154
                                                                                                                                                                                                                                                                                                 tccagcttttgatgagacctttacattctatgggataccctacaccccaaatcccaagaatt 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                          gacgatcctcccagagaagaagcataaagtgaaaactagagtgctgagaaaaaccttgga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agcccgtggcttgccagccatggatgagcagtcgatgacctctgacccatatatcaaaat 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tctcttcttcttcttagaatacaacttcgagagaaaagcatttgtgggtcaatatcaagga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tgagagtttaaagtccagcacttcccttacttcagaagagaaacaagagaagctgggaac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTACCCATCAAAAGAGACTATGGGGAAGAACTGAGGAGCCCCATGACAAGCCTGACCCCT
                                                    agcagcagaaggaac---tggtggagagcactgggaaagagatctgtgactaccccaggag 1391
                                                                                                                                                                                                      GATGGATATCACCGGTCTCTCAGGTAATCCTTATGTCAAGGTGAACGTCTACTACGGCAG
                                                                                                                                                                                                                                                                                      CATCATCAAGAGGAACATTCAGAAGTGCATTAGCAGAGGGGAACTCCAGGTATCTCTGTC
                                                                                                                                                                                                                                                                                                                                         agttctaattcctctctcgggaattgaattatctgaaggaaaaatgttaatgaatagaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACCATTCTCCCGGACAAGCGGCATCGAGTGAAGACCCGAGTGCTTCGCAAGACGCTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCTCACGGGCTGCCAGTGATGGATGACCAGACCCAGGGCTCCGATCCCTACATCAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTTACCTTCTCCGTGGACTACAACTTTCCCAAGAAAGCTCTGGTGGTGACAATCCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tgatctggagaatgcaaccccgaagctctttttagaaggggaaaaagagtcagtttcccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACACAGTGTCACAACCAGTGGTGCGGAACACTGGAGAGGTCTGCGAGAGTCCCCGCAA 1256
                                                                                                                                                                                                                                                                                                                             GGTCATGGTGCCATTGGCTGGAGTGGACCCCAGCACAGGCAAGGTTCAGCTGACCAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                         GGCCTGCTGAGCCACGACAAGGATCCCAGAGGGCCCTAGCCCTGCATCTTGTATGGACCAG
                                                                                                                                                                                                                                                                                      896
                                                                                                                                                                                                                                                                                                         1037
                                                                                                                                                                                                       1016
                                                                                                                                                                                                                                                                                                                             836
                                                                                                                                                                                                                                                                                                                                                                                                                                                 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
```

Job time: 13057 sec

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on:
                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
 646
629.2
625.2
617.4
596.2
592.2
564.8
505.6
474.4
                                                                                                         718.6
686.8
                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 length: 0
length: 2000000000
                                                                                                                                        Match
                                                                                                                                                     Query
                                                                                                                                                                                                                                          110:
111:
113:
114:
115:
116:
118:
119:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
 18.5
17.7
16.6
16.2
16.1
15.9
15.3
15.3
15.2
14.5
11.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11351937 seqs, 5372889281 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-680-121-1
3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        December 12, 2001, 10:53:59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_gss_pln:*
em_gss_pro:*
em_gss_rod:*
em_gss_vrt:*
                                                                                                                                                                                                                                                                                           em_gss_fun:*
em_gss_hum:*
em_gss_inv:*
                                                                                                                                                                                                                                                                                                                           gb_est1:*
gb_est2:*
gb_htc:*
gb_gss:*
                                                                                                                                                                                                                                                                                                                                                                               em_estov:*
                                                                                                                                                                                                                                                                                                                                                                                                                 em_estpl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                     em_estin:
                                                                                                                                                                                                                                                                                                                                                                                                                                               em_esthum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                      em_htc:*
                                                                                                                                                                                                                                                                                                                                                                                            em_estro:*
                                                                                                                                                                                                                                                                                                                                                                                                      em_estba:*
                                                                                                                                                                                                                                                                                                                                                                                                                           em_estom:*
                                                                                                                                                                                                                                       em_gss_other:*
                                                                                                                                        Length DB
 1054
888
656
635
723
688
601
702
591
739
499
  10
10
10
11
10
10
10
                                                                                                                                        IJ
AV727109
BG715690
AW160503
AW163709
BG699754
AV730176
AW953983
BG700203
BW162119
BG65092
AI339352
AA0817555
                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Search time 3159.83 Seconds (without alignments) 13232.302 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22703874
                             AV727109 AV727109
BG715690 602676962
AW160503 au73c12.y
AW163709 au97a06.y
BG699754 602681441
AV730176 AV730176
AW953983 EST365948
BG700203 602679821
AW162119 au73c12.x
                                                                                                                                      Description
```

C a

	45	43	42	41	40	39	38	37	36	35	34	<u>3</u> 3	32	3 1	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13
	350.8	52	352.4	353.2	355.6	359.8	365.6	368	368.8	369.4	376	378.8	379	383.4	386.4	387.4	391.6	399.2	402.2	405	406.2	406.4	409.4	412.8	416.2	416.4	424			•	445.2	UI.
	9.0																	•	•			•		•			•		•	•	•	11.8
	434	390	366	395	383	374	672	369	791	491	379	525	523	569	397	435	398	449	494	662	471	601	434	491	1174	442	451	463	689	475	712	565
	11	10	10	11	10	11	10	11	11	11	11	11	11	11	11	10	10	11	10	11	11	11	10	10	11	10	11	10	10	10	10	10
ALIGNMENTS	4.0	634	38	н05067	AA365639	D56270	AV751605	243564	BG671553	R51299	Z44486	H23552	BG672430		D52816	AA084868		H23524	AA206946		R59082		AA976133	AA206761	BG261870	AI306404	D53100	166	1416	8473	4	0633
	G 0	34047	0	6	Ħ	D56270 HUM422C08B	AV751605 AV751605	Z43564 HSC1FB081 n	BG671553 DRNBUC05	R51299 yg72c07.s1	Z44486 HSC21F031 n	H23552 ym53e02.sl	BG672430 DRNCIC06	BF043853 BP250014A	D52816 HUM089A07B	AA084868 znllf07.s	AV728050 AV728050	H23524 ym53e02.rl	AA206946 zq83a05.r	BF702882 MI-P-H2-a	R59082 yh03d11.r1	BF044050 BP250004A	on33d06.	zq83a05	BG261870 602373670	gn12g10	D53100 HUM098F08B	AA101663 zn80e10.s	EST3454	ne81f04.	914163 EST345	AV60633

a

O

O

o o

KEYWORDS SOURCE ORGANISM DEFINITION ACCESSION RESULT AV727109 FEATURES COMMENT REFERENCE VERSION LOCUS TITLE AUTHORS JOURNAL source AV727109 AV727109 AV727109 Unpublished (2000)
Contact: Zeguang Han
Chinese National Human Genome Center at Shanghai
351 Guo Shoujing Road, Zhangjiang Hi-Tech Park,
201203, P. R. China
Tel: 86-21-5080199(ex.45)
Fax: 86-21-50801922 1 (bases 1 to 1054)
1 (bases 1 to 1054)
Li,Y. Peng,Y. Song,H., Huang,Q., Yang,Y., Gao,G., Xiao,H., Xu,X.,
Li,Y., Qian,B., Liu,F., Qu,J., Gao,X., Cheng,Z., Xu,Z., Zeng,L., Xu
,S., Gu,W., Tu,Y., Jia,J., Fu,G., Ren,S., Zhong,M., Lu,G., Hu,R.,
Chen,J., Chen,Z. and Han,Z.
Homo sapiens cDNA HTC clones Email: hanzg@chgc.sh.cn This clone is available at CHGC in Shanghai. EST. AV727109.1 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. Homo sapiens human /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="HTCAYE03"
/clone_ilb="HTC"
/tissue_type="Hypothalamus"
/dev_stage="Adult" HTC Homo sapiens cDNA clone HTCAYE03 5', mRNA sequence. 1. .1054 Location/Qualifiers 1054 bp mRNA Pudong, Shanghai 17-OCT-2000

a O

BG665092 AI339352

au73c12.x 2 DRABYC01 2 qt15f02.x 5 zn22d07.r

Site_2:

```
В
                                                                                                                                                                                 DЬ
                                                                                                                                                                                                            QΥ
                       9
                                                        В
                                                                                   ρy
                                                                                                                                                δÃ
                                                                                                                                                                                                                                          Вр
                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                   ВÞ
                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                       1753
                                                                                                                                                                                                                                                                                                                                                                                                 1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1213
                 2046 tatcaaagggctgagttgagaacactgtggctgaaatataa----tttttctccccccta 2101
                                                                                                                                                                                                                   1869
                                                                                                                                                                                                                                                                            1811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1273 ttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcagttagtcttgggt 1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1153 aaaaagagaatctccaagaagaagactcatgtgaagaaatgcacccccaatgcagtgttc 1212
                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 AANAAGAGAATCTCCAAGAAGAAGACTCATGTGAAGAAATGCACCCNCAATGCAGTGTTC 60
                                                                                                                                                                                tgaaaatttatccatttatcttcaggttggggaaatcaatttttc--tttaatccaaag 1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aatgagctgtttgtctttgatattccttgtgagggccttgaagatataagtgttgaattt 1272
TTATAAAAAGGCTTCATTTTGTAACCCTTGNGCATGAAATAATACTTTTNCGTCCTCCTAA 958
                                                          TTCATAAGAAGTACTCACCATTCATTTTATATGGACCGTGAACCACGTTANGACATATAT 898
                                                                            atcataagagtaactca-gattcatttcaaaaaggacagtgaacaagctgagaaattattt 2045
                                                                                                                       CCTGCATATACAA-TATCTGGTCATTTCACTNTGGTNTGTGATTACTTTTGATGCATCTTTG 838
                                                                                                                                                                                                                                              TGAAAACTTATCCACTTAATCTTACGGTTGGGACAATCAACTCTTCGTCTAAATTCAAAG
                                                                                                                                                                                                                                                                                                                                   catgtcacaaaaagttaatgtgattaagattt-aaaaacgaaaagtatgcctt-gccttg 1810
                                                                                                                                                                                                                                                                                                                                                                   AGACATTGTATGAATACTGTGCCAGAATCCCAACATATAAATGTGACAATCTCATTGGAA 600
                                                                                                                                                                                                                                                                                                                                                                                     agacattttatgaatactgtgccagaatccccaaattataaatgtgacaatctcattggaa 1752
                                                                                                                                                                                                                                                                                                                                                                                                                                              aattttcataagatattcaaatatctccttcagattacccagtgatataactaggaatagtc 1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAATTGCCAAGTGGCACGTGCTCTGTGATGGTTAGCATCCTAGCCGTGAGTTGGAACTT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          caaattgccaagtggcacgtgctctgtgatggttagcatcctagccgtgagttggaactt 1452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGCAGCAGAAGGAACTGGTGGAGAGAGCACTGGAAAGAAGATCTGTGACTACCCCAGGAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gcagcagcagaaggaactggtggagagcactggaaagagatctgtgactaccccaggaga 1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGGTTTTGGATTCTGAAAGGNGGTCCCCGAAATGAGGTAATCGGGCAGTTAGTCTTGCGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGAGCTGCTTGTCTTTGATATTCCTTGTGAGGGCCTTGAAGATATAAGTGTTGAATTT 120
                                                                                                                                                                                                                                                                                                          CATGTCACACAAAAGTAATGTGATTACCATTTGATAAACGAAAAGTATGCCTTNGCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                AACTTTCATAAGATATTCAATATCTCCTTCAGATTACCAGTGATATAACTAAGAATAGTC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAGGTTTTTACTAGGCAAGGAGAAATTNTCTTTCTTTCTATATTGGATTGCAAGCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vector: pBluescript sk(-); Site_1: EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              189 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 718.6; DB 10;
Pred. No. 3.4e-131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          200 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              330 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels 14; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1054;
                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10;
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
SOURCE
ORGANISM
                                                             Ъ
                                                                                                      δõ
                                                                                                                                                В
                                                                                                                                                                                     QY
                                                                                                                                                                                                                                                                                                                                             BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
BG715690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 796; Conserv
2549 tgtcaaattagcacaaacaaagaatgtgttttcactatctttttctaggctaatttgtcttga 2608
                                                             2162 attattcactgcctgtcacaagcctcagt 2190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1018 ATTATTCAATTCCTTTACAAACCTCAAGT 1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Miklos Palkovits, M.D., Ph.D.
cDNA Library Preparation: Michael J. Brownstein (NHGRI), Shiraki
Toshiyuki and Piero Carninci (RIKEN)
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
cDNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
plate: LLAM10688 row: 1 column: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 888)

NIH-MCC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ### 888 bp 602676962F1 NIH_MGC_96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG715690.1 GI:13994877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        quality sequence stop:
Location/Qualifiers
                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                            Inote-"Organ: brain: Vector: pBluescriptR (modified pBluescript KS+); Site_l: BamHI; Site_2: Sall-XhoI (gtcgag); Oligo-dT primed using primer 5'.7TTTTTTTTTTTTTVV-3', size-selected for average insert size 2 3 kb and normalized to ROT 5. This is a primary library enriched for full-length olones and constructed using the Cap-trapper method (Carninci, in preparation). Library constructed by M. Brownstein (NIMH/NHGRI, National Institutes of Health). Note: this is a NIH_MGC Library." a 147 c 166 g 298 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="hypothalamus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="IMAGE:4799390"
/clone_lib="NIH_MGC_96"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                 17.7%; Score 686.8; DB 11; 93.4%; Pred. No. 6.2e-125; tive 0; Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens cDNA clone IMAGE:4799390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                   Indels 14; Gaps
                                                                                                                                                                                                                                                                             Length 888;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ٥,
                                                                                                                                                                                                                                      7;
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                               RESULT
AW160503
                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                     δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멎
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                       SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                       Вb
                  COMMENT
                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                VERSION
                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                    LOCUS
                            TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                        3198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425
                                                                                                                                                                                                                                                                                                                                       843
                                                                                                                                                                                                                                                                                                                                                                                             783
                                                                                                                                                                                                                                                                                                                                                                                                                                                   723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125
                                                                                                                                                                                                                                                                                                                                                                                          CCTAATGTAAAGAACATGTATTACATTCTGTATGTACAAAGATTAAAAATCAAC-TCTT 602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGGTAGGGCC
                                                                                                                                                                                                                                                                                                                                                                 gttgtaaggggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tacagttgaattattaaatatgcaagttagaaattaagtctactgaaaaatttacatttt 2848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aacatgaaatgaa----ctgtagtaggtgtgtgtttggggaagtcaaatggccatttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ttccactac-aaagtcacctcacagcatcttgctccactcggcatctctgt---gaaagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGTAAATTCTATGAAAAATGCATTTTCCAAACAACTTATACATGCTTTTTATGACTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ttgtaaattctatgaaaaatgcattttccaaacacttatacatgctttttatgactatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGTCAGGTTTTGTGTCAGTACTTTAGCAGTTTTTGAGAATGTGTTTGATATCACAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTAGCTTGAGAGTAATGTCACTATATTTGAGTTCTTAGAGAAGTATGAGTGGAACTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ttagcttgagagtaatgtcactatatttgagttcttagagaaagtatgagtggaacttgag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTGAAATTCATTCAGAACCTGTTAGATTAAAGCTGCACCCTGTGATTATTTGAAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tctgaaattcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACATGAAATGGAACTGTGTTAAGGTGGTTGTAACTTGGGGGCAAGTCAAATGTGCCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCCACTACAAAAGTCACCTCACAGCATCTTGCTCCACTCGGCCATCCTCTGTGGAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACAGTTGAATTATAAATATGCAAGTTAGAAATTAAGTCTACTGAAAAATTTACATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTCAAATTAGCACAACAAAGAATGTGTTTCACTATCTTTCTAGGCTAATTTGTCTTGA
                                                                                                                                                                                               mRNA sequence.
AW160503
AW160503.1 GI:
Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost,S. Krizman,D., Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Mar, J., Moore,B., Schellenberg,K., Steptoe,M., Tan,F., Theising,B. White,Y., Wylie,T., Waterston,R. and Wilson,R. WashU-NCI human EST Project Unpublished (1997)
Other_ESTs: au73cll.xl
Contact: Wilson RK
                                                                                                                                                                                                                                   AW160503 656 bp mrNA EST 09-NOV-1999 au73c12.yl Schneider fetal brain 00004 Homo sapiens cDNA clonv nMAGE:2781910 5' similar to SW:SYT4_RAT P50232 SYNAPTOTAGMIN:
                                                                                                           Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; 1 (bases 1 to 656)
                                                                                                                                                                                  EST
                                                                                                                                                       Homo sapiens
                                                                                                                                                                      human.
                                                                                                                                                                                                                                                                                                                                      854
                                                                                                                                                                                               GI:6299536
                                                                                                                          Craniata; Vertebrata; | Catarrhini; Hominidae;
                                                                                                                                       Euteleostomi;
                                                                                                                           Homo.
                                                                                 Jost,S.,
,M., Martin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   304
                                                                                                                                                                                                                                                                                                                                                                                                                        3256
                                                                                                                                                                                                                                                                                                                                                                                                                                                  782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          544
```

```
δõ
                                      Вþ
                                                      Qy
                                                                            밁
                                                                                              Qy
                                                                                                                   Db
                                                                                                                                   δõ
                                                                                                                                                        В
                                                                                                                                                                           δã
                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                 ρy
                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                 QУ
                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
421
                  557
                                       361
                                                          497
                                                                             301
                                                                                               437
                                                                                                                   241
                                                                                                                                      377
                                                                                                                                                          181
                                                                                                                                                                              317
                                                                                                                                                                                                 121
                                                                                                                                                                                                                    257
                                                                                                                                                                                                                                                            197
                                                                                                                                                                                                                                                                                                    137
                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                بر
         ctgagagtttaaagtccagcacttcccttacttcagaagagaaacaagagaagctgggaa
                                     CTGATCTGGAGAATGCAACCCCGAAGCTCTTTTAGAAGGGGAAAAAGAGTCAGTTTCCC
                                                                           atgataaaaatgaagtaaagaataagccagctgtgccaaagaattcattgcatctggatc
                                                                                                                                                        ATGATAAAAATGAAGTAAAGAATAAGCCAGCTGTGCCAAAGAATTCATTGCATCTGGATC
                                                                                                                                                                                                                                                                                                                       al Similarity
649; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. 1
Tel: 314 286 1810
Fax: 314 286 1810
Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This clone is available royalty-free IMAGE Consortium (info@image.llnl.gov Seq primer: -40RP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                  213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         quality sequence stop:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                  ۵
                                                                                                                                                                                                                                                                                                                                                                               /note="Organ: brain: Vector: pBluescript SK (Stratagene);
Site_1: SstI; Site_2: XhOI; Double-stranded cDNA was
prepared from human fetal brain tissue. 5' and 3'
adaptors were used in cloning as follows: 5' adaptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="frontal lobe"
/dev_stage="5 months post-conception"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:2781910"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1. .656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="Schneider fetal
                                                                                                                                                                                                                                                                                                                                16.6%;
98.9%;
                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    427
                                                                                                                                                                                                                                                                                                                               646; DB 10;
No. 6.8e-117;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .gov)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      through LLNL;
v) for further :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Louis,
                                                                                                                                                                                                                                                                                                                                         Length 656;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 contact the
                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                   196
                  616
                                      420
                                                         556
                                                                                                496
                                                                                                                                      436
                                                                                                                                                                             376
                                                                                                                                                                                                 180
                                                                                                                                                                                                                    316
                                                                                                                                                                                                                                                            256
                                                                            360
                                                                                                                   300
                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                       0
```

멍

CTGAGAGTTTAAAGTCCAGCACTTCCCTTACTTCAGAAGAGAAACAAGAGAAGCTGGGAA

0,

```
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
AW163709
                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΩÝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
     Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 617
     Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1. (Dases 1 to 635)

2. (Bases 1 to 635)

2. (Bases 1 to 635)

3. (Bases 1 to 635)

4. (Bases 1 to 635)

5. (Bases 1 to 635)

6. (Bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACGATCCTCCCAGAGAAGAAGCATATAGTGAANACTAGAGTGCTGAGATCAACC 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCTCTTCTTCTCCTTACAATACAACTTCTAGAGAAAAGCATTTGTGGTCAATATCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCCCGTGGCTTGCCAGCCATGGATGAGCAGTCGATGACCTCTGACCCATATATCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aagcccgtggcttgccagccatggatgagcagtcgatgacctctgacccatatatcaaaa 736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctctcttcttctccttagaatacaacttcgagagaaaagcatttgtggtcaatatcaagg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL;
IMAGE Consortium (info@image.llnl.gov) for further i
Seq primer: -40RP from Glbco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AW163709 635 bp mRNA EST DONG Saplens CDNA Clone LONG LONG LONG SAPLENS CDNA CLONE LONG SAPLENS OF THE CONTROL OF T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA sequence.
AW163709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AW163709.1 GI:6302742
                                                                                        206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             quality sequence stop: 434
Location/Qualifiers
                                                                                        Ω
                                                                    /note="Organ: brain; Vector: pBluescript SK (Stratagene); Site_1: SstI; Site_2: XhOI; Double-stranded CDNA was prepared from human fetal brain tissue. 5' and 3' adaptors were used in cloning as follows: 5' adaptor
                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="frontal lobe"
/dev_stage="5 months post-conception"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="IMAGE:2784203"
/clone_lib="Schneider fetal brain 00004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
     16
     . 2%;
     score
     629.2;
     DΒ
     10;
Length 635;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IV.
                                                                                                                                                                         JOURNAL COMMENT
                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                            SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
BG699754
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
nes 631; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tgacgatcctcccagagaagaagcataaagtgaaa 771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACGATCCTCCCAGAGAAGAAGCCTAAAGTGAAA 635
                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA sequence.
BG699754
                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                              BG699754.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                GI:13968377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 1.4e-113;
); Mismatches 4;
```

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (Dases 1 to 723)

28 NIH-MGC http://mgc.nci.nih.gov/.

National Institutes of Health, Mammalian Gene Collection (MGC)

(L) Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-remail.nih.gov

Tissue Procurement: Miklos Palkovits, M.D., Ph.D.

CDNA Library Preparation: Michael J. Brownstein (NHGRI), Shiraki
Toshiyuki and Piero Carninci (RIKEN)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: aagcccgtggcttgccagccatggatgagcagtcgatgacctctgacccatatatcaaaa CTCTCTTCTTCTCCTTAGAATACAACTTCGAGAGAAAAGCATTTGTGGTCAATATCAAGG ctctcttcttctccttagaatacaacttcgagagaaaagcatttgtggtcaatatcaagg ctgagagtttaaagtccagcacttcccttacttcagaagagaaacaagagaagctgggaa ctgatctggagaatgcaaccccgaagctctttttagaagggggaaaaagagtcagtttccc atgataaaaatgaagtaaagaataagccagctgtgccaaaggaattcattgcatctggatc totyotytoagagaaaatcatooaagtotaacaagactootooatacaagtttytyooty CAGTGGTGGGGATCTTCAGTGCATTTGGCCTTGGTCTTCACAGTCTCTCTTTTGCATGGA acacgcagtaaaaaatggctccgatcaccaccagccgggaagaatttgatgaaatcccca CTGAGAGTTTAAAGTCCAGCACTTCCCTTACTTCAGAAGAGAAACAAGAGAAGCTGGGAA CTGATCTGGAGAATGCAACCCCGAAGCTCTTTTTAGAAGGGGAAAAAAGAGTCAGTTTCCC ATGATAAAAATGAAGTAAAGAATAAGCCAGCTGTGCCAAAGAATTCATTGCATCTGGATC TGCTTAAGGGAGTTGATATNTACCCTGAAAACCTAAATAGCAAAAAGAAGTTTGGAGCAG tgcttaagggagttgatatttaccctgaaaacctaaatagcaaaaagaagtttggagcag TCTGCTGTCAGAGAAAATCATCCAAGTCTAACAAGACTCCTCCATACAAGTTTGTGCATG AAGCCCGTGGCTTGCCAGCCCTTGATGAGCAGTCGATGACCTCTGACCCATATATCAAAA BG699754 723 bp mRNA EST 07-MAY-2001 602681441F1 NIH_MGC_95 Homo sapiens cDNA clone IMAGE:4814098 Indels 480 436 180 120 60 420 556 360 300

```
BASE CO
                                                                                                                                      ρy
                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                      밁
 δã
                                          QΥ
                                                                     Дb
                                                                                          ρy
                                                                                                                  Вþ
                                                                                                                                                                В
                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2851
                                                                                                                                          3271
                                                                                                                                                                                                                                                                                 3091
                                                                                                                                                                                                                                                                                                                                                                             2971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                              366
                                                                                                                                                                                                                                                                                                                                                       186
                                                                                                                                                                                                                                                                                                                                                                                                      126
                                                                                                                    486
                                                                                                                                                                                                                                                                                                         246
                                                                                                                                                                                                                                                                                                                                                                                                                                                   66
                                                                                                                                                                                                            taatgtaaagaaaatgtattacattctgtatgtacaaagattaaaaatcaacctcttttt 3030
                                                                                                                               aatctaagtattcttcacggcagccagaagttaatggtggtagcagctgaggtatggttg
                                                                                                                                                                                                                                                                                                                  tytyctttaaaatyactttygyattaaaaaagcatatttcccaatcattytcttcattcc 3090
                                                                                                                                                                                                                                                                                                                                                                                                               gtaaattctatgaaaaatgcattttccaaacaacttatacatgctttttatgactatgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtcaggttttgtgtcagtactttagcagttttttgagaatgtgttttgatatcacagtgttt 2910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             681;
tgtttttgagtgtgaaaagttgagtaaaactatttgcaactggttttcagaaaagaga 3500
                                                                                tggtatcatgggccgtggaacagaatatatgttggacctctgaaaagttgtaaggggcca 3270
                                                                                                                                                                                                                                                                                                                                                       ·TAATGTAAAGAAATGTATTACATTCTGTATGTACAAAGATTAAAAAATCAACCTCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCAGGTTTTGTGTCAGTACTTTAGCAGTTTTTTGAGAATGTGTTTTGATATCACAGTGTTT 125
                        CTTAAAACTTCACCATGGATCCTTCGTAACTTAGTTTTTAGCTTTCTCAACATTTAAACG
                                            -ttttaaaattaaaatggataatttgtaaatagtttttagctttt----aaaatttaaag 3442
                                                                      ATTCTAAGTATTCTTCACGGCAGCCAGAAGTTAATGGTGGTAGCAGCTGAGGTATGGTTG
                                                                                                                                                                 TGGTATCATGGGCCGTGGAACAGAATATATGTTGGACCTCTGAAAAGTTGTAAGGGGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                      GTAAATTCTATGAAAAATGCATTTTCCAAACAACTTATACATGCTTTTTATGACTATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 http://image.llnl.gov
Plate: LLAM10709 row
High quality sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    quality sequence stop:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="hippocampus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="IMAGE:4814098"
/clone_lib="NIH_MGC_95"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             row:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 625.2; DB 11;
Pred. No. 8.1e-113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                3150
                                                                                                                                                                                                                                                                                                                                                                                                                            2970
                                                                                                                                                                 485
                                                                                                                                                                                                             425
                                                                                                                                                                                                                                    3210
                                                                                                                                                                                                                                                           365
                                                                                                                                                                                                                                                                                                                                                                                                      185
                         664
                                                                                                                                                                                                                                                                                                         305
```

```
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
AV730176
                                                                                                                              Qγ
                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
           δÃ
                                         뫄
                                                                   δÃ
                                                                                                     Вþ
                                                                                                                                                             В
                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                         Вp
                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                             2860
                                                                                                                                                                                                                                                       2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                     181
                                                                                                                                                               121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         665 TGTTTCTGAGTGTGACACGTCGAGTAAAACTATTTGCAACTGGTTTTCAGAAACGAGA
                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                    \vdash
aaatgactttgggattaaaaaagcatatttcccaatcattgtcttcattccactacaaag 3099
                                       tattaaatatgcaagttagaaattaagtctactgaaaaatttacattttgagtcaggttt 2859
                                                                                                                                                                                                                                                                                 atgaaaaatgcattttccaaactatatacatgctttttatgactatgcctaatgtaaa 2979
                                                                                                                                                                            tgtgtcagtactttagcagtttttgagaatgtgttttgatatcacagtgttttgtaaattct 2919
                                                                                                                                                               TGTGTCAGTACTTTAGCAGTTTTTGAGAATGTGTTTGATATCACAGTGTTTGTAAATTCT
                                                                                                                                                                                                                           TATTAAATATGCAAGTTAGAAATTAAGTCTACTGAAAAATTTACATTTTGAGTCAGGTTT 120
                                                                                                     ATGAAAAATGCATTTTCCAAACAACTTATACATGCTTTTTATGACTATGCCTAATGTAAA
                                                                                                                                                                                                                                                                                                                                                649;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AV730176 HTI
AV730176 HTI
AV730176
AV730176.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens cDNA HTF clones
Unpublished (2000)
Contact: Zeguang Han
Chinese National Human Genome Center at Shanghai
351 Guo Shoujing Road, Zhangjiang Hi-Tech Park, Pudong, Shanghai
201203, P. R. China
Tel: 86-21-50801919(ex.45)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gu,Y., Peng,Y., Song,H., Huang,Q.,
Li,N., Qian,B., Liu,F., Qu,J., Gac
,S., Gu,W., Tu,Y., Jia,J., Fu,G.,
Chen,J., Chen,Z. and Han,Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: hanzg@chgc.sh.cn
This clone is available at CHGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fax: 86-21-50801922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      numan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 688)
                                                                                                                                                                                                                                                                                                                                                                                                                                       213
                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               688
HTF Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                        XhoI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="HTFBMB12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /lab_host="SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="Hypothalamus"
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Vector: pBluescript sk(-);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="HTF"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 688
                                                                                                                                                                                                                                                                                                                                                             15.9%;
97.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                        100 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bp mRNA
sapiens cDI
                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                             Score 617.4; DB 10; Pred. No. 2.8e-111;
                                                                                                                                                                                                                                                                                                                                                                                                                                       135 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Huang,Q., Yang,Y., Gao,G., Xiao,H., Xu,}
Qu,J., Gao,X., Cheng,Z., Xu,Z., Zeng,L.,
Tu,G., Ren,S., Zhong,M., Lu,G., Hu,R.,
                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone
                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shanghai.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HTFBMB12 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Site_1:
                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
Homo.
                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         722
                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Site_2:
                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Xu, X.,
```

<u>ب</u>

```
RESULT
AW953983
    밁
                        Ş
                                              Вþ
                                                                  δÃ
                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                           JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                            Query Match
Best Local S
Matches 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COCUS
                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
3280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3400 aatggat 3406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 659 AATGGAT 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gccgatttttttttttaacatggaacaatgaaaccaacaacaacatttttaaaaattaa 3399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      attetteaeggeageeagaagttaatggtggtageagetgaggtatggttgttggaegag 3339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gggccgtggaacagaatatatgttggacctctgaaaagttgtaaggggccaaatctaagt 3279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGATTTTTCTTTTTTACATTGGAACATTG-AACCCACAACAACATTTGTAAAATTAA 658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTCTTCACGGAAGCCAGAAGTTAATGGTGGGAGCAGCTGATGTAATGGTG-TGGACCAG 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCCGTGGAACAGAATATATGTTGGACCTCTGAAAAGTTGTAAGGTGCCAATTCTAAGT 540
                                                                                                                                                                                                                                                  Assessment of gene expression patterns in a model of colon tumor metastasis using a 19,200 element cDNA microarray Unpublished (2000) Contact: John Quackenbush The Institute for Genomic Research 9712 Medical Center Dr., Rockville, MD 20850, USA Tel: 301 838 3528 Email: Johngetigr.org
                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 601)

1 (bases 1 to 601)

1 (bases 1, R., Abernathy, K., Dharap, S., Gaspard, R., Gay, C., Holleyde, P., Qi, R., Abernathy, V., Lee, N.H., Yeatman, T.J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AW953983 601 bp mRNA EST 01-JUN-2000
EST365948 MAGE resequences, MAGC Homo sapiens cDNA, mRNA sequence.
AW953983
AW953983.1 GI:8143561
                                                                                                     Similarity
                                                                                                                                                                                                                                            primer: Reverse
                                                                                            Conservative
                                                                                                                                                                þ
                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone_lib="MAGE resequences, MAGC"
/note="Vector: pBluescriptSKm"
103 c 107 g 191 t
                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                  15.3%;
                                                                                            0;
                                                                                          Score 596.2; DB 10; Length 601; Pred. No. 4.2e-107; O; Mismatches 3; Indels 0;
                                                                                          0;
                                                                                          0,
                                                                                                                                                                                                                                REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                           ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                     RESULT
BG700203
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                     FEATURES
                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2151
                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                2631 a 2631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                            601 A 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                           æ
```

```
2571 atgigtttoactatcttttctaggctaatttgtcttgagctgttgtctatagagcagttt 2630
[1111] | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

2E 1 (bases 1 to 702)

RS NIH-MGC http://mgc.nci.nih.gov/.

RATIONAL Institutes of Health, Mammalian Gene Collection (MGC)

NAL Unpublished (1999)

Contact: Robert Strausberg, Ph.D.

Email: cgapbs-remail.nih.gov

Tissue procurement: Miklos Palkovits, M.D., Ph.D.

CDNA Library Preparation: Michael J. Brownstein (NHGRI), Shiraki
Toshiyuki and Piero Carinhoi (RIKEN)

DNA Sequencing by: Incyte Genomics, Inc.

Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:

http://image.llnl.gov
plate: LLAMM10705 row: i column: 05

High quality sequence stop: 694.

1. Cortaction (MGC)

RSC Column: 05

High quality sequence stop: 694.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ccagaaaagattaagatgctacttgaaaagactgtgaagattttttacattgccagataa 2450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               catggccttggattattcactgcctgtcacaagcctcagtgtggcctgagaaatccctat 2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAGTTAGAAGTGCAATTTTCTTATAGGAAATAGGTATAGTGTGCAAGTGTACTTTTAAG 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ccagttagaagtgcaattttcttataggaaataggtatagtgtgcaagtgtacttttaag 2330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTACCTTTGTGAAATTGTTGAATTAGTTAGTTGAATAAAGAAATAAACTTCAACTAGAAAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gtacctttgtgaaattgttgaattagttagtgaataaagaaataaacttcaactagaaat 2270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATGGCCTTGGATTATTCACTGCCTGTCACAAGCCTCAGTGTGGCCTGAGAAAATCCCTAT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCATCGTTTGTACCCAGAGTCGGCATGGCCACCTAAGTCTTCATTTAATTTATTGTCCC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA sequence.
BG700203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG700203 702 bp mrNA EST 07-MAY-2001 602679821F1 NIH_MGC_95 Homo sapiens cDNA clone IMAGE:4812748 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG700203.1 GI:13969309
/clone="IMAGE:4812748"
/clone_lib="NIH_MGC_95"
/tissue_type="hippocampus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600
```

```
RESULT 9
AW162119/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                 ACCESSION
                                          DEFINITION
  VERSION
                                                        LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 677
                                                                                                                                                   3450
                                                                                                                                                                                                                                                              3333
                                                                                                                                                                                                                                                                                                                  3273
                                                                                                                                                                                                                                                                                                                                                                       3213
                                                                                                                                                                                                                                                                                                                                                                                                                           3153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           427
                                                                                                                                                                                                                                      546
                                                                                                                                                                                                                                                                                         487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  189
                                                                                                                          999
                                                                                                                                                                                909
                                                                                                                                                                                                                                                                                                                                                                                                  368
                                                                                                                                                                                                                                                                                                                                                                                                                                                      308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                        gagtgtgaaaagttgagt-aaaactatttgcaactgg
                                                                                                                                                                                                                                                                                                                                         tacaaagtcacctcacagcatcttgctccactcggcatctctgtgaaagcaacatgaaat 3152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aaattctatgaaaaatgcattttccaaaccaacttatacatgctttttatgactatgccta
                                                                                                                                                                                           aaaatt-aaaatggataatttgtaaa-tagtttttagctttttaaaatttaaagtgttttt 3449
                                                                                                                                                                                                                                                 tctaagtattcttcacggcagccagaagttaatggtggtagcagctgaggtatggttgtt 3332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tgctttaaaatgactttgggattaaaaaagcatatttcccaatcattgtcttcattccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atgtaaagaaaatgtattacattctgtatgtacaaagattaaaaatcaacctcttttttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGGTTTTGTGTCAGTACTTTAGCAGTTTTTGAGAATGTGTTTGATATCACAGTGTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGACGAGGCCGATTCTTTTTTTTAACATGGCAACAATGAAACCAACAACAACATTTTT
                                                                                                                                                                                                                                                                                         TCTAAGTATTCTTCACGGCAGCCAGAAGTTAATGGTGGTAGCAGCTGAGGTATGG-TGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCTTTAAAATGAC - TTGGGATTAAAAAAGCATATTTCCCAATCATCGTCTTCATTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAATTCTATGAAAAATGCATTTTCCAAACAACTTATACATGCTTTTTATGACTATGCCTA
                                                                                                                                                                                AAAATTCACAATGGATAATTGGTAAAACTAGTTTTAAAGCTTTTAAAATTTAAAGTGTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGTAAAGAAATGTATTACATTCTGTATGTACAAAGATTAAAAATCAACCTCTTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   al Similarity
677; Conserv
AW162119 591 bp mRNA
au73c12 x1 Schneider fetal b:
IMAGE:2781910 3', mRNA sequei
AW162119
AW162119.1 GI:6301152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cap-trapper method (Carninci, in preparation). Library constructed by M. Brownstein (NIMH/MHGRI, National Institutes of Health). Note: this is a NIH_MGC Library."

1 111 c 138 g 231 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15.2%;
97.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 592.2; DB 11
Pred. No. 2.5e-106;
0; Mismatches 13;
                            sequence
                                         brain
                                          00004
                                                                                                                                                   3485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 11;
                                         Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                         sapiens cDNA clone
                                                       09-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                          486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188
                                                                                                                                                                                                                                                                                                                                                                     3272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2852
                                                                                                                                                                                665
                                                                                                                                                                                                                                                                                       545
                                                                                                                                                                                                                                                                                                                                                                                                                          3212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
```

В

Qy Ъ Qy В δÃ 망 Qy Вb δÃ 밁 Qy B οy D δõ

Qy Ъ δÃ Ъ δÃ Ъ δÃ

밁

```
TITLE
JOURNAL
COMMENT
                     Š
                                                             В
                                                                                                   Qγ
                                                                                                                                            B
                                                                                                                                                                                δÃ
                                                                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                   3291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                              471
                                                                                                                                                                                                                            531
gggagatcttaatacctaatttcatcatttctgcaaaatgtactgttttagaatgtatta
                                                                                  actatttgcaactggttttcagaaaagagaaaagaaacaacaacaaggaattgaaacaggca
                                                                                                                                                                                                                                                                                                           CAGCCAGAAGTTAATGATGGTAGCAGCTGAGGTATGGTTGTTGGACGAGGCCGATTTTTT 532
                                                                                                                                                                                                                                                                                                                                tgtaaatagtttttagcttttaaaatttaaagtgtttttgagtgttgaaaagttgagtaaa
                                                                                                                                                                                                                                             ttttttaacatggaacaatgaaaccaacaacaacatttttaaaaattaaaatggataatt 3410
                                                                                                                                              TGTAAATAGTTTTTAGCTTTTAAAATTTAAAGTGTTTTTGAGTGTAAAAGTTGAGTAAA
                                                                                                                                                                                                                            TTTTTTAACATGGAACAATGAAACCAACAACAACATTTTTAAAAATTAAAATGGATAATT
                                                               ACTATTTGCAACTGGTTTTCAGAAAAGAGAAAAGAAACAACAAAGGAATTGAAACAGGCA
                                                                                                                                                                                                                                                                                                                                                                                            588;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (bases 1 to 591)
Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost,S.,
Krizman,D., Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Martin
,J., Moore,B., Schellenberg,K., Steptoe,M., Tan,F., Theising,B.,
White,Y., Wylie,T., Waterston,R. and Wilson,R.
WashU-NCI human EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1997)
Other_ESTs: au73c12.y1
Contact: Wilson RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This clone is available royalty-free t)
IMAGE Consortium (info@image.llnl.gov)
Seq primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Washington University School of Medicine 4444 Forest Park Parkway, Box 8501, St.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: est@watson.wustl.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    quality sequence stop: (
                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ည
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      size-selected for >0.5 kb inserts and has an average insert size estimated at 1.2 kb. This library was constructed using the CAP-trapper method for full-length enrichment and has not undergone amplification. Librar was constructed by Dr. Claudio Schneider (LNCIB-Area Science Park, Trieste, Italy). "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     //note="Organ: brain; Vector: pBluescript SK (Stratagene);
Site_1: SstI; Site_2: XhOI; Double-stranded cDNA was
prepared from human fetal brain tissue. 5' and 3'
adaptors were used in cloning as follows: 5' adaptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and 3' adaptor sequence:
5'-GAGAGAGAGAGACTCGAGTTTTTTTTTTTTTT-3'.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:2781910"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dev_stage="5 months post-conception"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="frontal lobe"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="Schneider fetal
                                                                                                                                                                                                                                                                                                                                                                                                           14.5%;
                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                        Score 564.8; DB 10;
Pred. No. 6.1e-101;
0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata;
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       through LLNL ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       brain 00004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The library was
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
Homo.
                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                    3470
                                                                                                                                                                                                                            472
                         3590
                                                                                                                                              412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Library
                                                                                                                                                                                                                                                                                                                                                                                            2
```

```
ACCESSION
VERSION
KEYWORDS
                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
BG665092
LOCUS
                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gaaggaagcatggtgtgtgagacagtgtctgttcttttgtgccagctctgtatgatgttt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       attaattgtttgtctgattagccaatctcaccacacccaaatggggaggtatacatgtttga 3710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caatatcaatgtgaatatcttgaatcctgttacaaatcctgcactgtattaaacatgtaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTAAGACCATGTTTGTAAGACATGAATAAATTGCTGCTTTTTGCCCCAAAAAAA 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gtaagaccatgtttgtaagacatgaataaattgctgcttttgcccaaaaaaa 3881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGGAAGCATGGTGTGAGACAGTGTCTGTTCTTTTGTGCCAGCTCTGTATGATGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAATATCAATGTGAATATCTTGAATCCTGTTACAAATCCTGCACTGTATTAAACATGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTAATTGTTTGTCTGATTAGCCAATCTCACCACCCAAATGGGGAGGTATACATGTTTGA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGAGATCTTAATACCTAATTTCATCATTTCTG-AAAATGTACTGTTTTAGAATGTATTA
                                                                                                                                                                                                                                                                                          FORWARD: T3
BACKWARD: T7
Seq primer: T3
POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           zhang,x.
Distinct gene expression profiles of rat dorsal root ganglion induced by peripheral nerve axotomy
Unpublished (2001)
Contact: Zhang xu
                                                                                                                                                                                                                                                                                                                                                                  Email: xu.zhang@ion.ac.cn
This clone is also available at Chinese National Human
This clone is also available at Chinese National Human
This clone is also available at Chinese National Human
Center at Shanghai, 351 Guo Shoujing Road, Zhangjiang H
Center at Shanghai, 351 Guo Shoujing Road, Zhangjiang Human
Telegraphine Shouland Chinese National Human
This clone is a control of the control of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG665092 739 bp n
DRABYC01 Rat DRG Library
mRNA sequence.
BG665092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Laboratory of Sensory System
Institute of Neuroscience
320 Yue Yang Road, Shanghai 200031,
Tel: 86-21-64748700-121
Fax: 86-21-64713446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Xiao,H.S., Han,Z.C
, Guo,C., Yan,Q.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Norway rat.
Rattus norvegicus
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG665092.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 739)
(bases 1 to 739)
ao, H.S., Han, Z.G., Zhang, F.X., Huang, Q.H., Lu, Y.J., Bao, L., Fao, L., Yan, Q., Jin, S.X., Zhu, Z.D., Xu, X.R., Li, N.G., Chen, Z.
                                                                        210
                                                              מ
                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GI:13887014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus cDNA clone DRABYC01 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                            n Genome
Hi-Tech
Xu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              293
                                                                                                                                                                                                                                                                                                                                                                                                                                 Park,
                                                                                                      REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                    RESULT 11
AI339352/c
LOCUS
                                                JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Sim
Matches 593;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         819
                                                                                                                                                                                                                                                                                                                                                                                                                                                 661 CACATTCTATGGGGT-CCCTTATCCCACATCCAAGAGCTGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
M Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Eukaryota; Metazoa; Chordata; Craniata; Hominidae;
1 (bases 1 to 499)
5 NOI-CGAP http://www.nobi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Pro
Tunor Gene Index
Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs redmail.nih.gov
Tissue Procurement: Christopher A. Moskaluk, M.D.,
                                                                                                                                                                                                                                                                mRNA sequence.
AI339352
AI339352.1 GI
                                                                                                                                                                                                                                                                                                                        AI339352 499 bp
gt15f02.x1 NCI_CGAP_GC4
                                                                                                                                                                                                                             human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                     GI:4076279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13.0%;
                                                                                                                                                            Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 505.6; DB 11;
Pred. No. 2.5e-89;
); Mismatches 109;
                                                                                                                                                                                                                                                                                                                             mRNA
Homo
                                                                                                                                                                                                                                                                                                                             sapiens
                                                                                                                                                                                                                                                                                                                             EST
cDNA clone
```

M. U.,

Ph

.0.

Michael

13-FEB-1999 IMAGE:1947675

ω

```
160 atcaccaccagccgggaagaatttgatgaaatccccacagtggtggggatcttcagtgca 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ATCACCACCAGCCGCGTGGAATTCGATGAAATTCCCACAGTGGTGGGCATCTTCAGTGCT
tacattctatgggatacccctacacccaaatccaagaattggcct 862
                                   ttcccttacttcagaagagaacaagagagctgggaactctcttctcctccttagaata
                                                                                                                                                                                                                                         ccctgaaaacctaaatagcaaaaagaagtttggagcagatgataaaaatgaagtaaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAGTCCAACAAGACTCCTCCATACAAGTTTGTGCACGTGCTTAAAGGAGTTGATATCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   caagtctaacaagactcctccatacaagtttgtgcatgtgcttaagggagttgatattta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tttggcctggtcttcacagtctctctctttgcatggatctgctgttcagagaaaatca-tc
                                                                                                                                                                                                                                                                                                         caattttcccaaaaccaacctcaaacctggcagtccttctgatctggagaatgcaacccc
                                                                                                                                                                                                                                                                                                                                                                                                  CCCAGAAAACCTAAGTAGCAAAAAGAAGTTTGGAGGAGATGACAAGAGTGAAGCAAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTGGCCTGGTCTTCACTGTCTCTCTTTGCCTGGATCTGCCAGAGAAGATCACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  739;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                   578
                                                                                                                                                                                                                                                                                                                     518
                                                                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                                                                         458
                                                                                                                                                                                                                                                                                                                                                                                                                           398
                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                              869
                                                                                                                                                                                        480
                                                                                                                                                                                                               638
                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2
```

```
RESULT 1
AA081755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3389 tttaaaattaaaatggataatttgtaaatagtttttagctttttaaaattttaaaagtgtttt 3448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                               3629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                 3808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                499
                                                                                                                                                                                                                                           140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   439
                                                                                                                                                                                                                                                                                                                        200
                                                                                                                                                                                                                                                                                                                                                                                                       260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         320
                                                                                 20
                                                                                                                                                            90
                                                                                                                                                                                                                                     gtgccagctctgtatgatgtttgtaagaccatgtttgtaagacatgaataaattgctgct 3867
                                                                                                                                                                                                                                                                                                                                           atggggaggtatacatgtttgaagaac-gtgtaactcggtaattgatttgttctgatgtt 3747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aacaaaggaattgaaacaggcagggagatcttaatacctaatttcatcatttctgcaaaa 3568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tgagtgtgaaaagttgagtaaaactatttgcaactggttttcagaaaagagaaaagaaac 3508
                                                                               TTTGCCCAAAAAAAAAAAA 1
                                                                                                    ATGGGGAGGTATACATGTTTGAAGAACTGTGTAACTCAGTAATTGATTTGTTCTGATGTT
                                                                                                                                                                                                                                                                                                                                                                                                     TGAGTGTGAAAAGTTGAGTAAAACTATTTGCAACTGGTTTTCAGAAAAGAAAAGAAAAC 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTAAAATTAAAATGGATAATTTGTAAATAGTTTTTAGCTTTTTAAAATTTAAAGTGTTTT 440
                                                                                                                                                            GTGCCAGCTCTGTATGATGTTTGTAAGACCATGTTTGTAAGACATGAATAAATTGCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                         ctgcactgtattaaacatgtaaattaattgtttgtctgattagccaatctcaccacccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACAAAGGAATTGAAACAGGCAGGGAGATCTTAATACCTAATTTCATCATTTCTG-AAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cDNA Library Preparation: M. Bento Soares, Ph.D. cDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Washington University Genome Clone distribution: NCI-CGAP clone distribution found through the I.M.A.G.E. Consortium/LLNL at: www-bio.llnl.gov/bbrp/image/image.html Insert Length: 1981 Std Error: 0.00 Seg primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Emmert-Buck, M.D., Ph.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    quality sequence stop: 444.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; 1st strand cDNA was prepared from 3 pooled germ cell tumors, and was then primed with a Not I oligo(dT) primer. Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pT7T3 vector. Library is normalized. Library was constructed by Bento Soares and M. Fatima Bonaldo. "
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="pooled germ cell tumors"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /clone="IMAGE: 1947675"
/clone_lib="NCI_CGAP_GC4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism-"Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 474.4; DB 1
Pred. No. 3.6e-83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequencing Center information can b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                             3688
                                                                                                                                                                                                                                                                                                                        141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bе
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2,
```

δð

밁

Ş

Ъ δÃ 밁 δÃ DЬ Qy 밁 Ş Вþ Ş Вb

Qγ 밁 δÃ

밁

```
Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
SOURCE
                                                                                               Вb
                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                  308
                                                                                               180
                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                188
                                                                                                                                                                                                                                                                                                                                                                                                     128
                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                        ttgtgcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaaaagaagt
                                                                                                                                                                                                                                             tcggacagaacacgcagtaaaaaatggctccgatcaccaccagccgggaagaatttgatg 187
                                                                                                                                                                                                                    TCGGACAGAACACGCAGTAAAAAATGGCTCCGATCACCACCAGCCGGGAAGAATTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (basse) to 518)

Hillier,L., Lennon,G., Becker,M., Bonaldo,M.F., Chiapelli,B., Chissoe,S., Dietrich,N., DuBuque,T., Favello,A., Gish,W., Hawkins,M., Rucaba,T., Lacy,M., Le,M., Mardis,E., Moore,B., Morris,M., Parsons,J., Prange,C., Rifkin,L., Mardis,E., Morris,M., Parsons,J., Prange,C., Rifkin,L., Rohlfing,T., Schellenberg,K., Soares,M.B., Tan,F., Thierry-Mey,J., Trevaskis,E., Underwood,K., Wohldmann,P., Waterston,R., Wilson,R. and Marra,M. Generation and analysis of 280,000 human expressed sequence tags of 20144478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        zn22d07.r1 Stratagene neuroepithelium
cDNA clone IMAGE:548173 5' similar to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Seq primer: -28M13 rev2 from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Washington University School of Medicine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Wilson RK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97044478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SYNAPTOTAGMIN IV: ;; mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA081755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    High quality sequence stop:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA081755.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="tabo:32000"
/db_xref="tabo:32000"
/db_xref="tabo:32000"
/clone="IMAGE:548173"
/clone_lib="Stratagene neuroepithelium NT2RAMI 937234"
/dev_stage="Ntera-2/RAMI neuroepithelial cells"
/lab_host="SOLR (kanamycin resistant)"
/note="Vector: pBluescript SK-; Site_1: EcoRI; Site_2:
/note="Vector: precursor cells induced with Retinoic
/not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="GDB:3926689"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:1623814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11.9%;
98.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           518 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 463.8; DB 1
Pred. No. 4.3e-81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     St. Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NT2RAMI 937234 Homo sapiens
SW:SYT4_MOUSE P40749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                    179
                                                                                                                                                                                                                                                                                                                                         120
                                  367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4;
```

```
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 13
AV606332
LOCUS
DEFINITION
    망
                                 δÃ
                                                                           뮹
                                                                                                        Qy
                                                                                                                                                                                                                                                   BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                       Matches
                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                     975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                           11
    71
agagatcatcaagagaaatgttaggaagtcttcaggacggggtgagttactgatctctct 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034 | 1034
                                                                       bovine CDNA sequencing
Unpublished (2000)
Contact: YoshKazu Sugimoto
Animal Genetics Division
Shirakawa Institute of Animal Genetics
Odakura, Nishigo, Nishi-Shirakawa, Fukushima 96:
Tel: 81-248-25-5725
Email: kazusugi@cocoa.ocn.ne.jp
Single pass sequencing.
This clone was obtained from a polyA-deleted cDr
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gcagtccttctgatctggagaatgcaaccccgaagctctttttagaagggaaaaaaggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGTGCATGTGCTTAAGGGAGTTGATATTTACCCTGAAAACCTAAATAGCAAAAAGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bos taurus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Bovinae; Bos.
1 (bases 1 to 565)
Sugimoto Y., Hirotsune, S., Takasuga, A., Itoh, R., Jitohzono, A. and Suzuki, H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AV606332 565 bp mRN
AV606332 Bos taurus kidney
5', mRNA sequence.
AV606332
AV606332 GI:9736705
                                                                                                                                                       h 11.8%;
Similarity 90.3%;
O1; Conservative
                                                                                                                                                                                                                                                                       162
                                                                                                                                                                                                                                                            /organism="Bos taurus"
/organism="Bos taurus"
/db.xref="taxon:9913"
/clone=lib="Bos taurus kidney fe
/tissue_type="kidney"
/dev_stage="fetus"
/lab_host="DH10B"
/note="Vector: pZLI; Site_1: Sal
was deleted from a Not1 site"
2 a 110 c 144 g 148 t
                                                                                                                                                                                                                                                                     þ
                                                                                                                                                       0
                                                                                                                                                 Score 458; DB 10;
Pred. No. 5.9e-80;
0; Mismatches 51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
ney fetus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EST
taurus
                                                                                                                                                                                                                                                                                                      Sall; Site_2: Not1;
                                                                                                                                                                                                                                                                                                                                                                                  fetus"
                                                                                                                                                                                      Length 565;
                                                                                                                                                                                                                                                                     1 others
                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-AUG-2000
cDNA clone E1KI034B06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961-8061,
                                                                                                                                                   ω,
                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                           Poly
                                                                           70
                                                                                                               974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    299
                                                                                                                                                   ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
AW914163
LOCUS
DEFINITION
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                              JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ДЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1035
                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  551
                    185
```

```
Unpublished (1998)
Other_ESTs: EST345466
Other_ESTs: EST345466
Contact: Lee, NH
The Institute for Genomic Research
9712, Medical Center Drive, Rockville, MD 20
9712, Medical Center Drive, Rockville, MD 20
Tel: (301)-838-3529
Fax: (301)-838-0208
Email: nhlee@tigr.org
This clone is available through the ATCC, co
tel#703-365-2700 for further information
Seg primer: M13 Reverse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctgctatcagtccaccacaaacactctaactgtggttgtcttaaaagctcgacatctgcc 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  taaaggtttttacta 1466
||| | |||||||||
TAACGATTTTTACTA 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aattgccaagtggcacgtgctctgtgatggttagcatcctagccg---tgagttggaact 1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agcagcagaaggaactggtggagagcactggaaagagatctgtgactacccccaggagaca 1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gyttttggattctgaaaggggstcccgaaatgaggtaatcgggcagttagtcttgggtgc 1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aaagagaatctccaagaagaagactcatgtgaagaaatgcacccccaatgcagtgttcaa 1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAACTCTTTGTCTTTGACATTCCTTGTGAGGGTCTAGAAGAGATAAGTGTTGAATTTCT 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tgagctgtttgtctttgatattccttgtgagggccttgaagatataagtgttgaattttt 1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATCGCCAAGTGGCACGCACTCTGTGATGGTTAGCACCCTANCCGTGATGAATTGGAACT 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCAGCAGAAGGAGCTGGAGAGCACTGGAAGGAGATCTGTGACTATCCCAGGAGGCA 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAGAGAATCTCTAAAAAGAAGACACATGTGAAGAAATGCACGCCCAATGCAGTGTTCAA 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 712)
Lee, N.H., Glodek, A., Chandra, I., Mason, T.M.,
Kerlavage, A.R. and Adams, M.D.
Rat Genome Project: Generation of a Rat EST (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AW914163 712 bp mRNA EST 25-MAY-2000 EST345467 Normalized rat brain, Bento Soares Rattus sp. cDNA clone RGIAB26 5' end, mRNA sequence.

AW914163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus sp. Rattus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AW914163.1
Location/Qualifiers

1 712

/organism="Rattus sp."
/ob_xref="rtaxon:10118"
/clone="reTAB26"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:8079837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST (REST) Catalog &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20850,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quackenbush, J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rat
```

Similarity

1.8e-77; DB 10;

Length

712;

```
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                 RESULT 1
AA484732
LOCUS
                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                    뫄
                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뭣
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                    SOURCE
                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 528
                                                                                                         TITLE
                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1090
                                                                                                                                                                                                                                                                                                                                                             1629
                                                                                                                                                                                                                                                                                                                                                                                                                1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 138
                                                                                                                                                                                                                                                                                                                                   675
                                                                                                                                                                                                                                                                                                                                                                                      615
                                                                                                                                                                                                                                                                                                                                                                                                                                          555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTAAAGGTTTTTACTACGCGAGAAGCAATTTTCTTTCT---TATACGCGATTGTAAGCT 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tctctctgctatcagtccaccacaaacactctaactgtggttgtcttaaaagctcgacat 1089
                                                                                                                                                                                                                                                                                                                                   GCCAAGTTTTCATAAGATACTGTTTCCCTC
                                                                                                                                                                                                                                                                                                                                                                                                   ggtgcagcagcagaaggaactggtggaggagcactggaaagagatctgtgactaccccagg 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tttttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcagttagtcttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatataagtgttgaa 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcacccccaatgcagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTACCGAAATCTGATGTGTCTGGACTTTCAGATCCCTACGTCAAAGTGAACCTGTACCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCCTCTGTTATCAGTCCACTACAAACACGCTCACTGTGGTTTGTCTTAAAAAGCGCGGCAC 137
                                                                                                                                                                                                                                                                                                                                                            gataaattttcataagatattcaatatctc 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGGCCCAGCAAGCTACTTTACTATTTATTTGTTTTGGTTAGAAGTGGATTAAATTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTGCCACAGCAGAAGGAAGTGGTGGGGGGCACTGGAAGGAGATCTGTGACTTCCCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTTTAGTTTTGGATTCTGAAAGGGGATCCCGAAATGAGGTGATCGGGCGGTTGGTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCAACGAACTGTTTGTCTTTGATATTCCTTGTGAGAGTCTTGAAGAAATAAGTGTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCAAGAAGAATCTCTAAAAAGAAGACTCACGTGAAAAAGTGCACTCCCAACGCAGTG
                                                                                                                                                                                                                                                                                                                                                                                    AGACCAGAAGATAGCTGTAAATGTGTATTATGATAATTTCCTCTTTTATTAGAGGCGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       528;
                                                                                                                                                                                                 AA484732
AA484732.1
EST.
                                                                                                  Mammalia; Eutheria; Primatés; Catarrhini; Hominio
1 (bases 1 to 475)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy
                                                                                                                                  Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; i
Mammalia; Eutheria; Primatés; Catarrhini; Hominidae;
                           Ph.D
                                                    Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                 AA484732 475 bp
ne81f04.s1 NCI_CGAP_Ew1
                                       Tissue
                                                                                          Tumor Gene Index
                                                                                                                                                                                                                                        sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                     -ggaaatcaagctacctttttgttgttgttgttgttgctagaaatggattgaattagt 1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
Library Preparation: David B. Krizman, Library Arrayed by: Greg Lennon, Ph.D.
                                       Procurement: Lee Helman, M.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11.4%;
83.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 445.2;
Pred. No. 1.8
                                                                                                                                                                                                                                                   mRNA
Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                   704
                                                                                                                                                                                                                                                   sapiens
                                                                                                                                                                                                                                                     CDNA
                                       Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98;
                                                                                                                                                                                                                                                  ST 19-AUG-1997 clone IMAGE:910687,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                       R. Emmert-Buck,
                                                                                                        Project
                                                                                                                                                          Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                        (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1209
                                                                                                                                                                                                                                                                                                                                                                                                             1628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               497
                                                                                                                                                                                                                                                                                                                                                                                      674
                                                                                                                                                                                                                                                                                                                                                                                                                                       614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              257
                                       3
                                                                                                                                                                                                                                                     mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
```

```
Ş
                                                      B
                                                                                δÃ
                                                                                                           밁
                                                                                                                                     Qy
                                                                                                                                                                  밁
                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 466;
                                                                                                                                                                                                                                                                                                                                                              3345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNT
                           3705
                                                                                                                                        3585
                                                                                                                                                                                                                                                    3465
                                                                                                                                                                                                                                                                                                         3405
                                                                                                                                                                                                                                                                                                                                                                                                      3285 tcacggcagccagaagttaatggtggtagcagctgaggtatggttgttggtggacgaggccga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                      367
                                                                                                             307
                                                                                                                                                                   248
                                                                                                                                                                                                                          188
                                                                                                                                                                                                                                                                               128
                                                                                                                                                                                                                                                                                                                                   83
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                         8
gtttgaagaac-gtgtaactcggtaattgatttgttctgatgttgtaac
                                                      atgtaaattaattgtttgtctgattagccaatctcaccacccaaatggggaggtatacat
                                                                                                          gtattacaatatcaatgtgaatatcttgaatcctgttacaaatcctgcactgtattaaac
                                                                                                                                                                  caggcagggagatcttaatacctaatttcatcatttctgcaaaatgtactgttttagaat
                                                                                                                                                                                                                       ataatttgtaaatagtttttagcttttaaaatttaaagtgtttttgagtgtgaaaagttg
                                                                                                                                                                                                                                                                                                                                                                                         TCACGGCAGCCAGAAGTTAATGGTGGTAGCAGCTGAGGTATGGTTGTTGGACGAGGCCGA
                                                                                                                                                                                                                                                                               ATAATTTGTAAATAGTTTTTAGCTTTTAAAATTTAAAGTGTTTTTGAGTGTGAAAAGTTG
                                                                                                                                                                                                                                                                                                                                    TTTTTTTTTTAACATGGAACAATGAAACCAACAACAACATTTTTAAAATTAAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.llnl.gov/bbrp/image/image.html
Insert Length: 696 Std Error: 0.00
Seq primer: -41ml3 fwd. ET from Amersham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA Sequencing by: Washington University Genome Clone distribution: NCI-CGAP clone distribution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   164
                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              quality sequence stop: 435.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:910687"
/clone_lib="NCI_CGAP_Ew1"
/tissue_type="Ewing's sarcoma"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Vector: pAMP10; mRNA made from Ewing's sarco cDNA made by oligo-dT priming. Non-directionally c Size-selected on agarose gel, average insert size Reference: Krizman et al. (1996) Cancer Research 56:5380-5383 "
                                                                                                                                                                                                                                                                                                                                                                                                                                                          11.4%;
99.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 443.
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                          e 443.4; LL
No. 4.5e-77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ewing's sarcoma,
                           3752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequencing Center information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                  3524
                                                                                                                                                                                                                                                                                                       3464
                                                                                                                                                                                                                                                                                                                                                              3404
                                                                                                                                                                                                                                                                                                                                                                                                                     3344
                                                                                                                                                                                             3584
                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                        3644
                                                                                                                                                                                                                                                                               187
                                                                                                                                                                                                                                                                                                                                   127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cloned.
                                                         426
                                                                                                             366
                                                                                                                                                                   306
                                                                                                                                                                                                                        247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ب</u>
```

completed: December 12, 2001, 12:20:57

```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                 N_Geneseq_1101:*

1: /SIDSB/gcgdata/geneseq/geneseqn/NA1980.DAT:*
2: /SIDSB/gcgdata/geneseq/geneseqn/NA1981.DAT:*
3: /SIDSB/gcgdata/geneseq/geneseqn/NA1982.DAT:*
3: /SIDSB/gcgdata/geneseq/geneseqn/NA1983.DAT:*
4: /SIDSB/gcgdata/geneseq/geneseqn/NA1984.DAT:*
6: /SIDSB/gcgdata/geneseq/geneseqn/NA1985.DAT:*
6: /SIDSB/gcgdata/geneseq/geneseqn/NA1985.DAT:*
7: /SIDSB/gcgdata/geneseq/geneseqn/NA1985.DAT:*
8: /SIDSB/gcgdata/geneseq/geneseqn/NA1985.DAT:*
9: /SIDSB/gcgdata/geneseq/geneseqn/NA1989.DAT:*
10: /SIDSB/gcgdata/geneseq/geneseqn/NA1989.DAT:*
11: /SIDSB/gcgdata/geneseq/geneseqn/NA1990.DAT:*
12: /SIDSB/gcgdata/geneseq/geneseqn/NA1991.DAT:*
13: /SIDSB/gcgdata/geneseq/geneseqn/NA1993.DAT:*
14: /SIDSB/gcgdata/geneseq/geneseqn/NA1993.DAT:*
15: /SIDSB/gcgdata/geneseq/geneseqn/NA1995.DAT:*
16: /SIDSB/gcgdata/geneseq/geneseqn/NA1995.DAT:*
17: /SIDSB/gcgdata/geneseq/geneseqn/NA1997.DAT:*
18: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
20: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
21: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
22: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
23: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
24: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
25: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
26: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
27: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
28: /SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-680-121-1
3891
                                                                                                                                                            | SIDSB/gcgdata/geneseq/yeneseqn/NA1984.DAT:*
| SIDSB/gcgdata/geneseq/yeneseqn/NA1985.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1985.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1985.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1986.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1986.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1986.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1990.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1990.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1991.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1995.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1997.DAT:*
| SIDSB/gcgdata/geneseq/geneseqn/NA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            930621 seqs, 428662619 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     December 12, 2001, 10:54:04; Search time 320.99 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (without alignments)
10392.388 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1861242
```

c 11		8 7	თ თ	4	ω	2	ב	Result	
216.6	216.6	361 264.2	362 362	363.6	430.6	3891	3891	Score	
5.6	101	ი. ა. ა	9 9 . 3 3	9.3	11.1	100.0	100.0	Query Match	•
383	388	424 318	2315 5517	5310	434	3891	3891		
22	22	20 16	22 22	22	21	19	19	BB	
AAI3185/ AAI00535	AAI10603	AAX41151 AAT25277	AAH14256 AAI60519	AAI58733	AAC25978	AAV57327	AAV54208	ID	SUMMARIES
Probe #526 used to	Probe #536 for gen	Human secreted pro	Human cDNA sequenc Human polynucleoti	Human polynucleoti	Human secreted pro	Hormone-regulated	Repro-PC-1.0 cDNA	Description	

0 000	0 0 0 0 0 0
444443333332226 4444433333332226 544334	12 13 14 114 115 116 116 117 119 120 220 220
163.2 163.2 162.1 162.1 14.1 15.4 1114.8 1114.8 1114.8 1112.9 1.4 80.2 91.4 80.2 79.2 79.2 79.2 66.4 66.4	177.4 177.4 177.4 177.4 177.4 177.4 177.4 173.173 173
	44444444 0000004444
938 1876 1192 1192 1192 1192 1193 11647 11647 11647 11647 11610 4001 1337 494 4514 4514 4514 4514 4514 4514 4514	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
117 222 222 222 222 222 221 221 221 221	
AAF58255 AAF58255 AAT19854 AAI19854 AAI1985648 AAI155570 AAC25648 AAI159409 AAI59409 AAI59409 AAH57563 AAH02900 AAF16073 AAC105887 AAC105887 AAC10589 AAC11525	AAF58252 AAF58254 AAF58257 AAF58259 AAF58262 AAF58255 AAF58254 AAF58254 AAF58254 AAF58259
Oligonucleotide Di Mouse inositol pol Probe #9787 for ge Probe #13736 used t Human secreted pro Human polynucleoti Human polynucleoti Human brain cell s Human prostate can Human prostate can Human secreted pro Human secreted pro Human brain cell s Human soustate can Human secreted pro Human secreted pro Human cDNA sequenc Human boc2-beta ge Doc2 (brain-specif Human Doc2-alpha e Human cDNA clone (EST clone HC986. Oligonucleotide Dl Oligonucleotide Dl	Oligonucleotide D1 Oligonucleotide D1 Oligonucleotide D2 Oligonucleotide D2 Oligonucleotide D2 Oligonucleotide D1 Oligonucleotide D1 Oligonucleotide D1 Oligonucleotide D1 Oligonucleotide D1 Oligonucleotide D1 Oligonucleotide D2 Oligonucleotide D2 Oligonucleotide D2

ALIGNMENTS

DR DR	Y P A	PA	PR	PR	XX	р X X	PD	XX	×	FT	FT	FΗ	×	2 >		X X	XX	DE	XX	×	AC	XX	IJ	RESULT
WPI; 1998-506363/43. P-PSDB; AAW74584.	French CK, Schneider PA, Yamamoto KK;	(REPR-) REPROGEN INC.		15-MAY-1997; 97US-0047811.		06-MAR-1998: 98WO-US04488	11-SEP-1998.	MO303344/ RE.		/*tag= a	CDS 1511428	Key Location/Qualifiers	tions subtone.	Homo capiene	cragnoproj chorabij racorno, ap.	Repro-PC-1.0; prostate cancer; marker; synaptotagmin; human;		Repro-PC-1.0 cDNA encoding prostate cancer-specific marker.	II-JAN-1999 (IIrst encry)		AAV54208;		AAV54208 standard; cDNA; 3891 BP.	RESULT 1 AAV54208

```
This cDNA sequence codes a prostate cancer-specific marker, termed Repro-PC-1.0 (see ARW74504), which represents a novel human brain control of the prostage of the control of the control
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 3891; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3891 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated Repro-PC-1.0 polynucleotide(s) - are used to de
products for the detection and prophylactic and therapeutic
treatment of prostate cancer
                                  481
                                                                 481
                                                                                                      421
                                                                                                                                       421
                                                                                                                                                                                                             361
                                                                                                                                                                          361
                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                          121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ctctttgcctcctcctgttccaggagctggtgccctggggctctgcgctgttgttttcag
                                                                                                                                                                                           aagaagtttggagcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaat
                                aaacctggcagtccttctgatctggagaatgcaaccccgaagctctttttagaaggggaa
                                                     aaacctggcagtccttctgatctggagaatgcaaccccgaagctctttttagaaggggaa
                                                                                                                       tcattgcatctggatcttgaaaagagagatctcaatggcaattttcccaaaacccacctc
                                                                                                                                                                          aagaagtttggagcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaat
                                                                                                                                                                                                                                                               tacaagtttgtgcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaa
                                                                                                                                                                                                                                                                                                              cagcacctcggacagaacacgcagtaaaaaaatggctccgatcaccaccaccagccgggaagaa
aaagagtcagtttcccctgagagtttaaagtccagcacttcccttacttcagaagagaaa
                                                                                                                                                                                                                                          tacaagtttgtgcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaa
                                                                                                                                                                                                                                                                                                                                                                                                       tttgatgaaatccccacagtggtggggatcttcagtgcattttggcctggtcttcacagtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                      cagcacctcggacagaacacgcagtaaaaaatggctccgatcaccaccagccgggaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tttgatgaaatccccacagtggtggggatcttcagtgcatttggcctggtcttcacagtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ctctttgcctcctcctgttccaggagctggtgccctgggctctgcgctgttgtttcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 3891; ilarity 100.0%; Pred. No. 0; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1229 A; 671 C; 788 G; 1203 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       develop
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  termed
brain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           120
600
                                                                                                    480
                                                                                                                                                                                                           420
                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                 В
                                                                                                                   Вb
                                                                                                                                                    Qy
                                                                                                                                                                                           Вb
                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рь
                  1621
                                                 1561
                                                                                                                                                                                                                                                                                                                                     1321
                                                                                                                     1501
                                                                                                                                                          1501
                                                                                                                                                                                             1441
                                                                                                                                                                                                                              1441
                                                                                                                                                                                                                                                                 1381
                                                                                                                                                                                                                                                                                                  1381
                                                                                                                                                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                                                                                                                          1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
aagagttggataaattttcataagatattcaatatctccttcagattaccagtgatataa
                                               ttgcaagcttgggaaatcaagctacctttttgttgttgttgttgttgttgctagaaatggatt
                                                                                                                                                                                                           ttagtcttgggtgcagcagcagaaggaactggtggagagcactggaaagagatctgtgac
                                                                                                                                                                                                                                                                                                                                                                                                                         agtgttgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttactgatctctctctgctatcagtccaccacaaacactctaactgtggttgtcttaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ctgagaaaaaccttggatccagcttttgatgagacctttacattctatgggataccctacctggaaaaaccttggatccagcttttgatgagacctttacattctatgggataccctac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gacccatatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caagagaagctgggaactctcttcttctccttagaatacaacttcgagagaaaagcattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     taccccaggagacaaattgccaagtggcacgtgctctgtgatggttagcatcctagccgt
                                                                                                                                                                                                                                                                                                                                                                                                       agtgttgaatttttggttttggattctgaaaagggggtcccgaaaatgaggtaatcgggcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gacccatatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gtggtcaatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gtggtcaatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctct
                                                                                                                                                                                         taccccaggagacaaattgccaagtggcacgtgctctgtgatggttagcatcctagccgt
                                                                                                                                                                                                                                                                                                                                 ttagtcttgggtgcagcagcagaaggaactggtggagagcactggaaagagatctgtgac
                                                                                                                                                                                                                              1500
                  1680
                                                   1620
                                                                                                                                                                                             1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1020
                                                                                                                                                          1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
```

Qy

밁 γQ В ρy

В

Qy

g

δÃ

Db Qy

å å Бр δδ Бр δÃ

В

2701 gctgcaccctgtgattatttgaaaagaattagcttgagagtaatgtcactatattttgagt 2760 	2641 gtottgtatcattttccagtgccagggttctgaaattcattca	2581 ctatctttctaggctaatttgtcttgagctgttgtctatagagcagtttacagacttgt 2640 	2521 catatgttcacgcaaqatatgcttaggctgtcaaattagcacaacaaagaatgtgtttca 2580 	2461 ttaaccaacaaacaaatgtaagactacaaaatcgttcaagagcaattctaatataattta 2520 	2401 ttaagatgctacttgaaaagactgtgaagatttttttacattgccagataaaaagtgttac 2460 	2341 gtacccagagtcggcatggccacctaagtcttcatttaatttattgtcccccagaaaaga 2400 	2281 gtgcaattttcttataggaaataggtatagtgtgcaagtgtacttttaaggccatcgttt 2340 	2221 gaaattgttgaattagttagtgaataaagaaataaacttcaactagaaatccagttagaa 2280 	2161 gattattcactgcctgtcacaagcctcagtgtggcctgagaaatccctatgtacctttgt 2220 	2101 aaggttacatgtgagtcaaaattttgtaaaatataacctcacataagaaccatggccttg 2160 	2041 tattttatcaaagggctgagttgagaacactgtggctgaaatataatttttctcccccct 2100 	1981 aattttatcataagagtaactcagattcatttcaaaaggacagtgaacaagctgagaaat 2040 	1921 tggttgtcctgcatataaaagtatctggtcatttcagttttggtttgtaattatttgatgc 1980 	1861 atccaaagatactaaaaaaatgtcctccagtttgtatttatt	1801 ccttgccttgtgaaaatttatccatttatcttcaggttgggggaaatcaatttttcttta 1860 	1741 atctcattggaacatgtcacaaaaagttaatgtgattaagatttaaaaacgaaaaagtatg 1800 	1681 ctaggaatagtcagacattttatgaatactgtgccagaatcccaaattataaatgtgaca 1740
Db	Db dd	מם אם	מם מס	ט ט ט	מם מ	מם שם	O DD	מם אם	מם סט	0 Db	מם אם	ם מם	Db	מם	Db Ov	Db do	Db Cv
3781 ggtgtg	721 act	721 actor	6 01	541 aatac	481 ac	421 ttta	361 tggaa	301 ti	241	81 6	1 cacto	61 agc	1000	11 Caactt 41 caactt	81 5	821 att	761 tetta 761 tetta

84	ggtgtgtgagacagtgtctgttcttttgtgccagctctgtatgatgttttgtaagaccatg	ന	Db -
3840	qtqtqtqaqacaqtqtctqttcttttqtqccaqctctqtatqatqtttqtaaqaccatq	7	Ωγ
3780	actcggtaattgatttgttctgatgttgtaactcaatagaagtgttttggaaggaa	7	DЬ
3780	ctcggtaattgatttgttctgatgttqttactcaatagaagtgtttttggaaggaagca	72	Qy
7	gtctgattagccaatctcaccacccaaatggggaggtatacatgtttgaagaacgtgt	9	рь
3720	tctgattagccaatctcacccaaatggggaggtatacatgtttgaagaacgt	99	Qy
3660	gtgaatatcttgaatcctgttacaaatcctgcactgtattaaacatgtaaattaatt		дь
3660	tgaatatcttgaatcctgttacaaatcctgcactgtattaaacatgtaaattaatt	6	Qy
3600	ttcatcattctgcaaaatgtactgttttagaatgtattacaatatcaa		ф
3600	atacctaatttcatcatttctgcaaaatgtactgttttagaatgtattacaatatc	Ġ	Qy
3540	agagaaaagaaacaacaaaggaattgaaacaggcagggagatct	4.6	Db
3540	ctggttttcagaaaagagaaaagaaacaacaaaggaattgaaacaggcagg	48	Qy
3480	ttagcttttaaaatttaaagtgtttttgagtgtgaaaagttgagtaaaactatttgc	42	Db
4.8	tttagcttttaaaatttaaagtgttttttgagtgtgaaaagttgagtaaaactattg	42	Qy
3420	gaaaccaacaacaattttaaaattaaaattgataatttgtaaatag	36	Db
3420		36	Qy
3360	aatggtggtagcagctgaggtatggttgttggacgaggccgatttttttt	30	ф
3360	taatggtggtagcagctgaggtatggttgttggacgaggccgatttttttt	3301	Qy
3300	gttggacctctgaaaagttgtaaggggccaaatctaagtattcttcacggcagcagaag	3241	ФФ
3300	ttggacctctgaaaagttgtaaggggccaaatctaagtattcttcacggcagccagaa	4	Qy
3240	agtcaaatggccattttatgtatgtgcatttggtatcatgggccgtggaacagaatatat	3181	Db
3240	gtcaaatggccattttatgtatgtgcatttggtatcatgggccgtggaacagaatata	8	Qy
3180	cactcggcatctctgtgaaagcaacatgaaatgaactgtagtaggtgtgtagtttgggga	3121	Db
3180	actcqqcatctctqtqaaaqcaacatqaaatqaactqtaqtaqtqtqtqt	N	Qy
3120	agcatatttcccaatcattgtcttcattccactacaaagtcacctcacagcatcttgctc	3061	Db
3120	gcatatttcccaatcattgtcttcattccactacaaagtcacctcacagcatcttgct	90	Qy
3060	tgtacaaagattaaaaatcaacctcttttttgtgctttaaaatgactttgggattaaaaa	0	рb
3060	gtacaaagattaaaaatcaacctctttttttgtgctttaaaatgacttttgggattaaaaa	3001	Qy
3000	caacttatacatgctttttatgactatgcctaatgtaaagaaaatgtattacattctgta	2941	Db
3000	aacttatacatgctttttatgactatgcctaatgtaaagaaaatgtattacattctgta	4	Оу
2940	tttgagaatgtgtttgatatcacagtgtttgtaaattctatgaaaaatgcattttccaaa	8	Db
2940	ttgagaatgtgtttgatatcacagtgtttgtaaattctatgaaaaatgcattttccaa	88	Qy
2880	attaagtctactgaaaaatttacattttgagtcaggttttgtgtgtcagtactttagcagtt	2821	Db
2880	ttaagtotactgaaaaatttacattttgagtcaggttttgtgtcagtactttagcagt	œ	Qy
2820	tottagagaagtatgagtggaacttgagtacagttgaattattaaatatgcaagttagaa	2761	Db
2820	cttagagaagtatgagtggaacttgagtacagttgaattattaaatatgcaagttagaa	2761	Qy

밁 δÃ

3891 3891

Matches

3891; Conservative

0;

Mismatches

0;

Indels

0; Gaps

0

```
This nucleotide sequence represents a hormone-regulated gene from CC human prostate cancer cells. In order to isolate sequences that are over-expressed in male LNCaP tumours, a male-LNCaP-specific probe was generated by 3 rounds of subtractive hybridisation with female LNCaP tumour cDNA. The probe was used to perform a primary corresponding to the material control of a lambda 'AP-male-LNCaP tumour cDNA library positive plaques were subjected to secondary and then tertiary screens using male-and female-specific probes to isolate partial clone repro-PC-1.0. Subsequent screening of the male-LNCaP tumour clone reading frame encoding 425 amino acids (see ANM75782). The encoded protein has regions of homology to the C2 regulatory domain of calcium-dependent isoforms of protein kinase C and to isoforms of synaptotagmin. The gene was localised to chromosome traits in a cell. The methods involve cultivating the cell as a graft in 2 different hormonal environments and determining whether expression of the trait differs in the 2 grafts. The methods can be used to identify hormonally-regulated traits and hormonally-regulated genes for use as targets for therapeutic intervention in
                                                                                                                                                                                                                                                                                                                                                                                              Identification of hormone-regulated traits, e.g. in cancers -exposing grafts of biological material to different hormonal environments in animals of different reproductive states
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 199
P-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3891 BP; 1229 A; 671 C; 788 G; 1203 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                       Example 1; Page 59-62; 85pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-MAY-1997;
07-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-SEP-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Repro-Pc-1.0; prostate cancer; LNCaP; hormone-regulated gene;
human; synaptotagmin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAV57327;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             French CK, Yamamoto KK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (REPR-) REPROGEN INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W09839661-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hormone-regulated Repro-PC-1.0 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-DEC-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAV57327 standard; cDNA; 3891 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1998-506379/43.
DB; AAW75782.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97US-0047811.
97US-0041246.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98WO-US04519.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
151..1428
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                 þу
```

Query Match Best Local Similarity

100.0%;

Score 3891; Pred. No. 0;

DB 19;

Length 3891;

œ (thactgatototototgotatoagtocaccacaaacaototaactgtggttgtottaaaa	1021	B 2
1080	פפינים בעליהם בשלים בעם בים בים בים בים בים בים בים בים בים בי	1031	2 5
02	atgitaatgaatagagagatcatcaagagaaatgitaggaagtcitcaggacggggtgag	961	, Q
960	atgatatcattggggaagttctaattcctctctcgggaattgaattatctgaaggaaaa	901	DЪ
960	atatcattggggaagttctaattcctctctcgggaattgaattatctgaaggaaaa	901	Qy
	cccaaatccaagaattggccttgcacttcacaattttgagttttgacaggttttcaaga	841	DЬ
900	gccttgcacttcacaattttgagtttttgacaggttttcaaga	841	Qy
840	tgagaaaaaccttggatccagcttttgatgagacctttacattctatgggatacccta	781	Db
840	agaaaaaccttggatccagcttttgatgagacctttacattctatgggataccct	781	Qy
780	a tgacgatcctcccagagaagaagcataaagtgaaaactaga	721	Db
780	acccatatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagt	721	Qy
720	caatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacct	661	Db
	tygtcaatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctc	661	Ωу
660	gctgggaactctcttcttcttcttagaatacaacttcgagagaaaa	601	Db
660	aagagaagctgggaactctcttcttcttcttcgagaatacaacttcgagagaaaagcatt	601	Qy
600	tttcccctgagagtttaaagtccagcacttcccttacttcaga	541	Дb
600		541	Qy
540	acctggcagtccttctgatctggagaatgcaaccccgaagctc	481	ф
540	aacctggcagtccttctgatctggagaatgcaaccccgaagctctttttagaagggga	481	Qy
480	attgcatctggatcttgaaaagagagatctcaatggcaatttt	421	Дb
480	cattgcatctggatcttgaaaagagagatctcaatggcaattttcccaaaaccaacc	421	Qy
420	gatgataaaaatgaagtaaac	361	дb
420	lagaagtttggagcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaa	361	Qγ
360	att	301	DЬ
360	acaagittgigcatgigcitaagggagitgatatttacccigaaaacciaaatagcaa	301	Qy
300	tctctctttgcatggatctgctgtcagagaaaatcatccaagtctaacaagactcctcca	241	Db
300	ctctctttgcatggatctgctgtcagagaaaatcatccaagtctaacaagactcctcc	241	Qy
240	tttgatgaaatccccacagtggtggggatcttcagtgcatttggcctggtcttcacagtc	181	ДD
240	ttgatgaaatccccacagtggtggggatcttcagtgcatttggcctggtcttcacag	181	Qy
180	cagcacctcggacagaacacgcagtaaaaaatggctccgatcaccaccagccgggaagaa	121	Db
	aycacctcggacagaacacgcagtaaaaaatggctccgatcaccaccagccgggaaga	121	ργ
120	tgagatccaggcaagtgaatccagccaggcagttttccctt	61	ДD
	gttccgaaagccggcgcttgagatccaggcaagtgaatccagccag	61	Qy
		ь	дb
60	tetttgeeteeteetgtteeaggagetggtgeetgggetetgegetgttgtttea	1	Qy

gttgga	3241	Qy		די היחים יה המים יה היחים היה והיה מים המים היה היה היה היה היה היה היה היה היה ה
agtcaa	3181	Db		a — a
gtca	3181	Qy		orr caretrates of the contract of the contract of the caretrates o
HIIIII	<u> </u>	Db		0
agcata	3121	Qy Qy	J	1981 aattitatcataagagtaactcagattcatttcaaaaggacagtgaacaagctgagaaat 2040
agcata 	061	Qy)	981 aattttatcataagagtaactcagattcatttcaaaaggacagtgaacaagctgagaaat 204
tgtaca	3001	Db dd		1921 tggttgtcctgcatataaaagtatctggtcatttcagttttggtttgtaattatttgatgc 1980
- aa	941	Db S		1861 atccaaagatactaaaaaaatgtcctccagtttgtatttatt
tttgag	2881	Ov Db		1801 ccttgccttgtgaaaatttatccatttatcttcaggttgggggaaatcaatttttcttta 1860
tga	2821 2881	ор Оу	. 0	
attaag 	1	Оу		 b) Claggaalagicagacatitlatgaalacigigccagaalcccaaaltalaaatgigaca 41 atctcattggaacatgtcacaaaaagttaatgtgattaagatttaaaaacgaaaagtatg 1
111111 tettag	2761	dd 43		681 ctaggaatagtcagacattttatgaatactgtgccagaatccccaaattataaatgtgaca 174
lctgc	701	da da	5 0	1621 aagagitggataaattitcataagatattcaatatctccttcagattaccagtgatataa 1680
ct:	2641 2701	Db Qy		561 gaattagtagaccagaaagtaacttcaaatgtgtattatgataatttccctatttatt
gtcttg	2581 2641	рь Оу		301 tigcaagctigggaaalcaagctaccttttgttgttgttgttgttgttgctagaaatggatt 1 501 ttgcaagcttgggaaalcaagctacctttttgttgttgttgttgttgctagaaatggatt 1
ta at	2521 2581	Db Qy		
ta:	2461 2521	Db Qy		
taag	2401 2461	Db Qy		321 tragtcttgggtgcagcaggaaggaactggtggagagcactggaaagaagtctgtgac 138 [
- cc	341 401	Db Qy		261 agtgttgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcag 132
5 5 -	281	Db .	•	201 aatgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatata 126
gaaatt gaaatt	2221 2221 2281	Qy Db	3 3	41 ctgtaccatgccaaaaagagaatctccaagaagaagactcatgtgaag:
att	161	Оу		1081 gctcgacatctgcctaaatctgatgtgtccggactttcagatccctatgtcaaagtgaac 1140

 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9
 9

3300	ttggacctctgaaaagttgtaaggggccaaatctaagtattcttcacggcagccagaag	3241	Qy
3240	agtcaaatggccattttatgtatgtgcattttggtatcatgggccgtggaacagaatatat		Db
3240	agtcaaatggccattttatgtatgtgcatttggtatcatgggccgtggaacagaatata	-	Qy
3180	. cacteggeatetetgtgaaageaacatgaactgaactgtagtgtgtgtgttggtgga		Db
3180	. cactcggcatctctgtgaaagcaacatgaaatgaactgtagtagtgtgtagttttgggga		Qy
12	agcatatttcccaatcattgtcttcattccactacaaagtcacctcacagcatcttgctc		Db V
3 6		9 6	
3060	ctcttttttgtgctttaaaatgactttgggattaaaaa 	3001	D Qy
3000	caacttatacatgctttttatgactatgcctaatgtaaagaaaatgtattacattctgta	94	Db
3000	caacttatacatgctttttatgactatgcctaatgtaaagaaaatgtattacattctgta		Qγ
2940	tttgagaatgtgtttgatatcacagtgttttgtaaattCtatgaaaaatgcattttccaaa	88	Db
2940	tttgagaatgtgtttgatatcacagtgtttgtaaattctatgaaaaatgcattttccaaa	2881	Qy
2880	attaagtctactgaaaaatttacattttgagtcaggttttgtgtcagtactttagcagtt	œ	Db
2880	attaagtctactgaaaaatttacattttgagtcaggttttgtgtcagtactttagcagtt	2821	Qy
2820	. tcttagagaagtatgagtggaacttgagtacagttgaattattaaatatgcaagttagaa	7	Db
2820	tcttagagaagtatgagtggaacttgagtacagttgaattattaaatatgcaagttagaa	7	Qy
2760		7	Db
2760	ctycaccctqtgattatttgaaaagaattagcttgagagtaatgtcactatatttgagt	2701	Qy
2700	gtottgtatoattttooagtgocagggttotgaaattoattoagaacotgttagattaaa	2641	Db
2700	gtcttgtatcattttccagtgccagggttctgaaattcattc		Qy
2640	ctatagagcagtttacagacttgt	2581	Db
2640	tatcttttctaggctaarttgtcttgagctgttgtctatagagcagtttacagacttgt	2581	Qy
2580	tgcttaggctgtcaaattagcacaacaaagaatgtgtttca	2521	Db
2580	atatgttcacgcaaaatatgcttaggctgtcaaattagcacaacaaagaatgtgtttca	2521	Qy
2520	taaccaacaaatgtaagactacaaaatgttcaagagcaattctaatataattta	2461	Db
2520	aaccaacaaacaaatgtaagactacaaaatcgttcaagagcaattctaatataattta	4	Qy
2460	taagatgctacttgaaaagactgtgaagattttttacattgccagataaaaagtgttac	4	Db
2460	ttaagatgctacttgaaaagactgtgaagatttttttacattgccagataaaaagtgttac	2401	Оу
2400		2341	Db
2400	gtacccagagtcggcatggccacctaagtcttcatttaatttattgtcccccagaaaaga		Qy
2340	gtgcaattttcttataggaaataggtatagtgtgcaagtgtacttttaaggccatcgttt	2281	Db
2340	gtgcaattttcttataggaaataggtatagtgtgcaagtgtacttttaaggccatcgttt	2281	Qy
2280			Db
2280	. gaaattgttgaattagttagtgaataaagaaataaacttcaactagaaatccagttagaa	2221	Qу
2220	gattattcactgcotgtcacaagcctcagtgtggcotgagaaatccctatgtacctttgt	2161	Db
2220	gattattcactgcctgtcaagcctcagtgtggcctgagaaatccctatgtacctttgt	2161	Qy

```
멍
                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                  Βb
                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                    DЪ
                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                      рь
                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                                                                                                                       3721
                                                                                                                                             gene therapy;
                                                                                                                                                                                                                                                                                                                                       3721
                                                                                                                                                                                                                                                                                                                                                                       3661
                                                                                                                                                                                                                                                                                                                                                                                       3661
                                                                                                                                                                                                                                                                                                                                                                                                                        3601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3361
         WPI; 2000-500381/45
                         Dumas Milne Edwards J,
                                                          26-FEB-1999;
                                                                         21-FEB-2000; 2000EP-0200610.
                                                                                            06-SEP-2000
                                                                                                            EP1033401-A2
                                                                                                                                                                                                                         AAC25978 standard;
                                                                                                                                                                                                                                                                                                                                                                                                        3601
                                                                                                                                                                                                                                                                                                                                                                                                                                          3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                          3541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3241
                                                                                                                                                                      Human secreted protein 5' EST, SEQ ID NO: 30053
                                                                                                                                                                                      06-OCT-2000 (first entry)
                                                                                                                                                                                                         AAC25978;
                                                                                                                                                                                                                                          w
                                                                                                                                                                                                                                                                ggtgtgtgagacagtgtctgttcttttgtgccagctctgtatgatgtttgtaagaccatg
                                                                                                                                                                                                                                                                                                            99t9t9t9agacagt9tct9ttcttttgtgccagctctgtatgat9tttgtaagaccatg
                                                                                                                                                                                                                                                                                                                                              aatacctaatttcatcatttctgcaaaatgtactgttttagaatgtattacaatatcaat 3600
                                                                                                                                                                                                                                                                                                                                                                                                                                                aatacctaatttcatcatttctgcaaaatgtactgttttagaatgtattacaatatcaat 3600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ttttagctttttaaaattttaaagtgttttttgagtgtgaaaagttgagtaaaactatttgca 3480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tggaacaatgaaaccaaccaaccactttttaaaattaaaatggataatttgtaaatagt 3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tgtctgattagccaatctcaccacccaaatggggaggtatacatgtttgaagaacgtgta
                                                                                                                                                                                                                                                                                                                                                                               tgtctgattagccaatctcaccacccaaatggggaggtatacatgtttgaagaacgtgta 3720
                                                                                                                                                                                                                                                                                                                                                                                                     ttttagcttttaaaatttaaagtgtttttgagtgtgaaaagttgagtaaaactatttgca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tggaacaatgaaaccaacaacaacatttttaaaattaaaatggataatttgtaaatagt 3420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5' EST; expressed sequence tag; secreted protein; cDNA isolation;
herapy; chromosome mapping; ss.
                                                          99US-0122487
                                                                                                                                                                                                                         CDNA; 434
                         Duclert
                                                                                                                                                                                                                         ВР
                         ۸,
                         Giordano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3480
```

```
The present sequence is one of a large number of 5' ESTs derived from mRNAs encoding secreted proteins. No ORF has yet been conclusively identified within the present sequence. The 5' ESTs were prepared from total human RNAs or polyA+ RNAs derived from 30 different tissues. EST sequences usually correspond mainly to the 3' untranslated region (UTR) of the mRNA because they are often obtained from oligo-dT primed cDNA libraries. Such ESTs are not well suited for isolating cDNA sequences derived from the 5' ends of mRNAs and even in those cases where longer CDNA sequences have been obtained, the full 5' UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5' ends and can therefore be used to obtain full length cDNAs and genomic DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and chromosome mapping procedures. They are used to obtain upstream regulatory sequences and to design expression and secretion vectors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New nucleic acid that is a 5' expressed sequence tag (5' EST) for obtaining cDNAs and genomic DNAs that correspond to 5'ESTs and for diagnostic, forensic, gene therapy and chromosome mapping procedures -
Sequence 434 BP; 132 A; 61 C; 83 G; 156 T; 2 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID 30053; 71pp + CD-ROM; English.
```

```
QΥ
                                            Дb
                                                                 ρ
                                                                                           Db
                                                                                                               Qy
                                                                                                                                           В
                                                                                                                                                             Qy
                                                                                                                                                                                       Вb
                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                   В
Вp
                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Sim
Matches 431;
                      2941
                                                                                                                   2821
                                                                                                                                                                2761
                                                                                                                                                                                                               2701
                                                                                                                                                                                                                                                             2641
                                                                                                                                                                                                                                                                                              2581 ctatctttctaggctaatttgtcttgagctgttgtctatagagcagttttacagacttgt 2640
                                                                                                                                                                                                                                                                                                                                            2521 catatgttcacgcaaaatatgcttaggctgtcaaattagcacaacaaagaatgtgttttca 2580
                                                                                                                                                                                                                                     121
421
                                            361
                                                                                                                                                                                       181
                                                                                                                                           241
                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                                                 Н
                                                                                                                                                                                                                                  caacttatacatgc 2954
                                                                                                        attaagtctactgaaaaatttacattttgagtcaggttttgtgtcagtactttagcagtt
                                                                                                                                                                                     ctatcttttctaggctaatttgtcttgagctgttgtctatagagcagtttacagacttgt 120
                                                                                                                                                                                                                                                                                                                                catatgttcacgcaaaatatgcttaggctgtcaaattagcacaacaaagaatgtgtttca
caacttatacatgo
                                                       tttgagaatgtgtttgatatcacagtgtttgtaaattctatgaaaaatgcattttccaaa
                                                                                         attaagtctactgaaaaatttacattttgagtcaggttttgtgtcagtactttagcagtt
                                                                                                                                                     tottagagaagtatgagtggaacttgagtacagttgaattattaaatatgcaagttagaa
                                            tttgagaatgtgtttgatatcacagtgtttgtaaattctatgaaaaatgcatdntccaaa
                                                                                                                                        tcttagagaagtatgagtggaacttgagtacagttgaattattaaatatgcaagttagaa
                                                                                                                                                                                                                                                                                                                                                                              Similarity 99.3
31; Conservative
                                                                                                                                                                                                                                                                                                                                                                                        11.18; 99.38;
                                                                                                                                                                                                                                                                                                                                                                            Score 430.6; DB 21; Length 434; Pred. No. 8.8e-88; 1; Mismatches 2; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                    2940
                                                                                                                  2880
                                                                                                                                                                 2820
                                                                                                                                                                                                               2760
                                                                                                                                                                                                                                                            2700
                                                                                                                                           300
                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                 60
                                                                                           360
                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                               0
```

RESULT
AA158733
ID AA15
XX
AC AA15
XZ
DT 22-C
XX
DE Huma
XX
KW Huma
KW peri

22-OCT-2001 AAI58733; AAI58733 standard; cDNA; 5310 BP

4

Human; nootropic; immunosuppressant; peripheral nervous system; neuropath;

neuropathy;

cytostatic; gene therapy;
y; central nervous system;

Human polynucleotide SEQ ID NO 936.

```
 \begin{array}{l} \textbf{X} \times \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{Y} \times \textbf{Y} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf{X} \\ \textbf{X} \\ \textbf{X} \times \textbf{X} \\ \textbf
                                                                                                     δÃ
                                                                                                                                                                 р
                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                             Qy
δÃ
                                                     Вþ
                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            03-AUG-2000;
14-SEP-2000;
19-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAA98642-AA442213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system disease, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Inmune system suppression, activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-JUL-2000;
19-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-JAN-2000;
25-APR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zhao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HYSE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  leukaemia; ss.
  312
                                                        418
                                                                                                                                                                                                                                                                             298
                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
nes 745; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΥΤ,
QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           as
                                                                                  atggatctgctgtcagagaaaatcatccaagtctaacaagactcctccatacaagtttgt
                                                                                                                                                                                             agtggtggggatcttcagtgcatttggcctggtcttcacagtctctct----
                                                                                                                                                                                                                                                                                                         cacgcagtaaaaaatggctccgatcaccaccagccgggaagaatttgatgaaatccccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-442253/47.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens.
gcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaaaagaagtttgg
                                                     ctggtcatgctgccaccagcaggcagagaagaagcacaagaacccaccatacaagtttat
                                                                                                                                                                 ctctgattacgacatggctgagatcaccaatatccgacctagctttgatgtgtcaccggt 357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          disorders.
The sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nucleic acids and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for receptor activity, arthritis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        central nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Liu C
Wang Z
Zhou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000US-0488725.
2000US-0552317.
2000US-0598042.
2000US-0620312.
2000US-0653450.
2000US-0653450.
2000US-06393036.
2000US-07273444.
                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 ,C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ָם,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Asundi V,
Wehrman T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                936; 10078pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                            9.3%;
57.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; 1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polypeptides, system injurie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for this
                                                                                                                                                                                                                                                                                                                                                                                Score 363.6; I
Pred. No. 2.8e
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chen R,
Xu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Χu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ç;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        injuries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    len R, Ma
Ku C, Xue
Drmanac R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       patent did
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     useful
                                                                                                                                                                                                                                                                                                                                                                                                                  2.8e-72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Y,
AJ,
RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          not form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inflammation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                              22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Τ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          part of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ren F,
Zhang
                                                                                                                                                                                                                                                                                                                                                                                                                                              5310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  leukaemias
                                                                                                                                                                                                                       -ctttgc
                                                                                                                                                                                                                                                                                                                                                                                        18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Wang
                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          printed
                                                                                                                                                                 417
                                                                                                                                                                                                                                                                                                                                  197
                                                                                                                                                                                                                       251
                                                                                                                                                                                                                                                                                                                                                                                        4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                  δ
                                                                                                                                                                                             밁
                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                  В
                            1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          432
```

```
478
                                                                                                                                                                                                                                                                                                                                                                                                                                          ctaccccaggagacaaattgccaagtggcacgtgctctgtga
                                                                                                                                                                                                                                                                                                                                                                         gtaccatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcaccccaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gatctctctctgctatcagtccaccacaaacactctaactgtggttgtcttaaaagctcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   aatgaatagagagatcatcaagagaaatgttaggaagtcttcaggacggggtgagttact 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aatccaagaattggccttgcacttcacaattttgagtttttgacaggttttcaagagatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             atatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagtgctgag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctctgaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gaagctgggaactctcttcttctccttagaatacaacttcgagagaaaagcatttgtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttcccctgagagtttaaagtccag-----cacttcccttacttccagaagagaaacaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         atcttgtatagaccaattacccatcaaaatggactatggggaagaactaaggagccctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tcacatgctcaaaggcatcagcatatacccagagaccctcagcaacaagaagaaaatcat
                                                                   gatcctgggggcacacagtgtcacagccagtggtgctgaacactggagagaggtctgcga
                                                                                                                                                                                        tgttgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatcggggcagtt
                                                                                                                                                                                                                                                                              tgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatataag
                                                                                                                                                                                                                                                                                                                                                 ctactacggcagaaagcgcattgccaagaagaaacccatgtgaagaagtgcactttgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ggtgtctctgtcatatcagcctgtggcacagagaatgacagtggtggtcctcaaagccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           actgaccagggacatcatcaaaaaggaatatccagaagtgcatcagcagaggggagctcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tgtcattggcgaggtcatggtgccactggcaggggtggaccccagcacaggcaaggtaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gctgcaggacctggtgctgcacttccttgtcctcagctttgaccgcttctctcgggatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gaagaccctggaccctgtgtttgacgagaccttcaccttctatggcatcccctacagcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    aaaaaccttggatccagcttttgatgagacctttacattctatgggataccctacaccca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ctacatcaaaatgaccatccttcctgacaaacggcatcgggtgaagaccagagtgctgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gacaatccaggaggcccacgggctgccagtgatggatgaccagacccagggatctgaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      catgctaggatccctcaccttctcagtggactataacttcccgaaaaaagccctggtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tacaagcctgacccctggggagagcaaaaccacctctccatcatctccagaggaggatgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tccttctgatctggagaatgcaaccccgaagctcttttagaaggggaaaaagagtcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ggacgcagcagaggctggcctgctaagccgagacaaagatcccagggggcctagctctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caaagtgcggagagacaaagatggtcctgggagggaaggtggacgtaggaacctgttggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   agcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaattcattgcatct
                                                                                                                                                           catcgagttcctcgttatcgacttcgatcgcaccaccaagaatgaggtggtggggaggct
                                                                                                                                                                                                                                                      =
=
=
=
                                                                                             1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1142
                                                                                                                                                                                                                                                         1437
                                                                                                                                                                                                                                                                                                                                                                                               1202
                                                                                                                                                                                                                                                                                                                                                                                                                                               1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491
                                                                                                                                                                1497
                                                                                                                                                                                                                                                                                                    1262
                                                                                                                                                                                                                                                                                                                                                    1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    657
                                                                     1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   777
```

В

1558

gagcccccgcaagcctgtggccaagtggcacagtctgagcga 1599

```
RESULT AAH1256

AAH1256

AAH1266

ACX AAH1

ACX AAH1

DTY 26-C

XXX HOME

XXX HOME

XXX HOME

PR PR 111-

PR PR 121-

PR PR 111-

PR 111-

PR 111-

PR 09-

PR 09-
                                                                                                                                                                           The present invention describes primer sets for synthesising 5602 CC full-length cDNAs defined in the specification. Where a primer set CC comprises: (a) an oligo-dT primer and an oligonucleotide comprises one of CC to the 5602 nucleotide sequences defined in the specification, where the CC oligonucleotide comprises at least 15 nucleotides; or (b) a combination CC of an oligonucleotide comprises at least 15 nucleotides; or (b) a combination CC of an oligonucleotide comprising a sequence complementary to the CC complementary strand of a polynucleotide which comprises a 5 end sequence complementary to a complementary strand of a polynucleotide which comprises a 5 end comprises a 5 end sequence complementary to a CC polynucleotide comprises a 3 end sequence, where the CC oligonucleotide comprises at least 15 nucleotides and the combination of CC the 5 end sequence/3 end sequence is selected from those defined in CC the 5 end sequence/3 end sequence is selected from those defined in gene therapy. The primers are useful for synthesising polynucleotides, CC particularly full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by CC the full-length cDNAs. The primers are useful for the full-length CDNAs easily without any specialised methods. AAH33616 to AAH3628 and CC AAB95893 represent human amino acid sequences; AAB92446 to AAB95893 represent human amino acid sequences; AAB92446 to AAB95893 represent invention.
                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-JUL-1999;
27-AUG-1999;
11-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs .
                                                                                                                                      Sequence 2315 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 8; SEQ ID 11566; 2537pp + CD ROM; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; primer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAH14256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAH14256 standard; cDNA; 2315 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (HELI-) HELIX RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ģ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Isogai T, Nishikawa T,
Sugiyama T, Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99JP-0248036.
99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            detection; diagnosis; antisense therapy; gene therapy;
                                                                                                                                      585 A; 600 C;
                           9.3%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID NO:11566
Score 362; DB 22;
Pred. No. 4.8e-72;
0; Mismatches 540;
                                                                                                                                      570 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hayashi K, S
A, Nagai K,
                                                                                                                                560 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Saito K,
(, Otsuki
                                                   Length 2315;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yamamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SS
                                                                                                                                В
                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                        Дδ
                                                                                                                                                                                                                                                                                     QY
                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                          γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЪ
```

Matches

744;

Conservative

0;

Indels

18;

```
δÃ
                                                                                                                                                                                                                         1083
     1203
                                                                                                                                     1143
                                                                                                                                                                                1086
                                                                                                                                                                                                                                                                       1026
                                                                                                                                                                                                                                                                                                                1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138
                                                                                                                                                                                                                                                                                                                                                            966
                                                                                                                                                                                                                                                                                                                                                                                                    963
                                                                                                                                                                                                                                                                                                                                                                                                                                             906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    903 gctgcaggacctggtgctgcacttccttgtcctcagctttgaccgcttctctcgggatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            243
                                                                                                                                                                                                                                                                                                           actgaccagggacatcatcaaaaaggaatatccagaagtgcatcagcagaggggagctcca
                                                                                                                                                         gtaccatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcaccccaa
                                                                                                                                                                                                                                                gatctctctctgctatcagtccaccacaaacatctaactgtggttgtcttaaaagctcg
                                                                                                                                                                                                                                                                                                                                    aatgaatagagagatcatcaagagaaatgttaggaagtcttcaggacggggtgagttact 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    aaaaaaccttggatccagcttttgatgagacctttacattctatgggataccctacaccca
tgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatataag
                                           ctactacggcagaaagcgcattgccaagaagaaacccatgtgaagaagtgcactttgaa
                                                                                                                                  acacttgccgaagatggatatcaccggtctctcaggtaatccttatgtcaaggtgaacgt
                                                                                                                                                                                                                      ggtgtctctgtcatatcagcctgtggcacagagaatgacagtggtggtcctcaaagccag
                                                                                                                                                                                                                                                                                                                                                                                                  tgtcattggcgaggtcatggtgccactggcaygggcggacccccagcacaggcaaggtaca
                                                                                                                                                                                                                                                                                                                                                                                                                           aatccaagaattggccttgcacttcacaattttgagttttgacaggttttcaagagatga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gaagaccctggaccctgtgttttgacgagaccttcaccttctatggcatcccctacagcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctacatcaaaatgaccatccttcctgacaaacggcatcgggtgaagaccagagtgctgcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         atatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagtgctgag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gacaatccaggaggcccacgggctgccagtgatggatgaccagacccagggatctgaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           caatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctctgaccc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        catgctaggatccctcaccttctcagtggactataacttcccgaaaaaaagccctggtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gaagctgggaactctcttcttctccttagaatacaacttcgagagaaaagcatttgtggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tacaagcctgacccctggggagagcaaaaccacctctccatcatctccagaggaggatgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttcccctgagagtttaaagtccag-----cacttcccttacttcagaagagaaacaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atcttgtatagaccaattacccatcaaaatggactatggggaagaactaaggagccctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tccttctgatctggagaatgcaaccccgaagctctttttagaaggggaaaaagagtcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ggacgcagcagaggctggcctgctaagccgagacaaagatcccagggggcctagctctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caaagtgcggagagacaaagatggtcctgggagggaaggtggacgtaggaacctgttggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tcacatgctcaaaggcatcagcatatacccagagaccctcagcaacaagaagaaatcat 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaaaagaagtttgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ctggtcatgctgccaccagcaggcagagaagaagcacaagagcccaccatacaagtttat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atggatctgctgtcagagaaaatcatccaagtctaacaagactcctccatacaagtttgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cacgcagtaaaaaattggctccgatcaccaccagccgggaagaatttgatgaaatccccac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaattcattgcatct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agtggtggggatcttcagtgcatttggcctggtcttcacagtctctct----ctttgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ctctgattacgacatggctgagatcaccaatatccgacctagctttgatgtgtcaccggt
                                                                                                                                                                                                                                                                                                             1082
                                                                                                                                                                                                                                                                     1085
                                                                                                                                                                                                                                                                                                                                                                                                                                             965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       551
```

4.

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                             21-JAN-2000;
25-APR-2000;
09-JUL-2000;
The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1263
                                                                                                                Claim
                                                                                                                                                                                                       Zhao
                                                                                                                                                                                                                Wang
                                                                                                                                                                                                                          Tang
                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAI60519;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAI60519
                                                                                                                                                                     P-PSDB;
                                                                                                                                                                                                                                                                                                         03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                     WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-OCT-2001
                                                                                                                                                                                                                                                  (HYSE-)
                                                                                                                                                                                                                                                                                  14-SEP-2000;
19-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                         26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                               26-JUL-2001
                                                                                                                                                                                                                                                                                                                  19-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   σ
                                                                                                                                                                                                      γ, r,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctaccccaggagacaaattgccaagtggcacgtgctctgtga
                                                                                                                                                                     2001-442253/47.
DB; AAM41363.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gagcccccgcaagcctgtggccaagtggcacagtctgagcga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       agtcttgggtgca---gcagcagaaggaactggtggagagcactggaaagagatctgtga 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gatcctgggggcacacagtgtcacagccagtggtgctgaacactggagagaggtctgcga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        catcgagttcctcgttatcgacttcgatcgcaccaccaagaatgaggtggtgggggggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tgttgaatttttggtttttggattctgaaagggggtcccgaaatgaggtaatcgggcagtt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.
                                                                                                                                               nucleic acids and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polynucleotide
                                                                                                                                                                                                                                                  HYSEQ
                                                                                                                                                                                                      Liu (
Wang :
Zhou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              standard;
                                                                                                                SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SS
                                                                                                                                                                                                                                                                     2000US-0488725.
2000US-0552317.
2000US-0598042.
2000US-0620312.
2000US-063215.
2000US-0662191.
2000US-0693036.
2000US-0727344.
                                                                                                                                                                                                  u C,
u Z,
u P,
                                                                                                                                                                                                                                                                                                                                                                          2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first
                                                                                                                                                                                                                                                  INC
                                                                                                                                     nervous
                                                                                                                                                                                                      Asundi V,
Wehrman T,
Goodrich
                                                                                                                4508;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ
                                                                                                                                                                                                            , T,
                                                                                                                                    polypeptides, us
system injuries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5517
                                                                                                              10078pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H
                                                                                                                                                                                                       æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chen R,
Xu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4508
                                                                                                                                                                                                       Drmanac
                                                                                                                                                                                                                Ma
Xue
                                                                                                                                              useful
                                                                                                                                                                                                       a Y,
e AJ,
RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 =
                                                                                                                                                                                                                Qian >
                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1421
                                                                                                                                               treating
                                                                                                                                                                                                                g χΒ,
                                                                                                                                                                                                               Ren F,
Zhang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 =
                                                                                                                                               disorders
                                                                                                                                                                                                                 Ų,
                                                                                                                                                                                                                            Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1322
                                                                                                                                                                                                                            Ö
```

```
8888888x&
 В
                         Ωy
                                                     Вþ
                                                                             Qγ
                                                                                                           밁
                                                                                                                                    Qγ
                                                                                                                                                                  В
                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                               Вb
                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C.N.S disorders.
Note: The sequence data
                                                                                                           1166
                                                                                                                                                                   1106
                                                                                                                                                                                                                        1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               utilisation of the activities such as:
                                                                                846
                                                                                                                                       786
                                                                                                                                                                                             726
                                                                                                                                                                                                                                                                               986
                                                                                                                                                                                                                                                                                                         909
                                                                                                                                                                                                                                                                                                                                      926
                                                                                                                                                                                                                                                                                                                                                               552
                                                                                                                                                                                                                                                                                                                                                                                           866
                                                                                                                                                                                                                                                                                                                                                                                                                      492
                                                                                                                                                                                                                                                                                                                                                                                                                                                806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
nes 744; Conserv
                                                                                                                                                                            atatatcaaaatgacgatcctcccagagaagaagcataaagtgaaaactagagtgctgag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaaaagaagtttgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               atggatctgctgtcagagaaaatcatccaagtctaacaagactcctccatacaagtttgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gctgcaggacctggtgctgcacttccttgtcctcagctttgaccgcttctctcgggatga
                                                                    aatccaagaattggccttgcacttcacaattttgagtttttgacaggttttcaagagatga
                                                                                                                       aaaaaccttggatccagcttttgatgagacctttacattctatgggataccctacaccca
                                                                                                                                                                                                                                    caatatcaaggaagcccgtggcttgccagccatggatgagcagtcgatgacctctgaccc
                                                                                                                                                                                                                                                                                            atcttgtatagaccaattacccatcaaaatggactatggggaagaactaaggagccctat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    caaagtgcggagagacaaagatggtcctgggagggaaggtggacgtaggaacctgttggt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     agcagatgataaaaatgaagtaaagaataagccagctgtgccaaagaattcattgcatct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctggtcatgctgccaccagcaggcagagaagaagcacaagaacccaccatacaagtttat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ctctgattacgacatggctgagatcaccaatatccgacctagctttgatgtgtcaccggt 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cacgcagtaaaaaatggctccgatcaccaccagccgggaagaatttgatgaaatccccac
tgtcattggcgaggtcatggtgccactggcaggggtggaccccagcacaggcaaggtaca
               tatcattggggaagttctaattcctctctctgggaattgaattatctgaaggaaaaatgtt
                                                                                                          gaagaccctggaccctgtgtttgacgagaccttcaccttctatggcatcccctacagcca
                                                                                                                                                                  ctacatcaaaatgaccatccttcctgacaaacggcatcgggtgaagaccagagtgctgcg
                                                                                                                                                                                                                       gacaatccaggaggcccacgggctgccagtgatggatgaccagacccagggatctgaccc
                                                                                                                                                                                                                                                                              catgctaggatccctcaccttctcagtggactataacttcccgaaaaaaagccctggtggt
                                                                                                                                                                                                                                                                                                                                   tacaagcctgacccctggggagagcaaaaccacctctccatcatctccagaggaggatgt
                                                                                                                                                                                                                                                                                                                                                            ttcccctgagagtttaaagtccag-----cacttcccttacttcagaagagaaacaaga
                                                                                                                                                                                                                                                                                                                                                                                                                   tccttctgatctggagaatgcaaccccgaagctctttttagaaggggaaaaagagtcagt
                                                                                                                                                                                                                                                                                                                                                                                                                                              ggacgcagcagaggctggcctgctaagccgagacaaagatcccaggggggcctagctctgg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tcacatgctcaaaggcatcagcatatacccagagaccctcagcaacaagaagaaaatcat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۸,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for this
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 362;
Pred. No. 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ç;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             patent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1294
                                                                                                                                                                                                                                                                                                                                                  Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Immune system suppression,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             did
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>.</u>;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             form part of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 5517;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
 1345
                                                      1285
                                                                                                           1225
                                                                                                                                                                                                                          1105
                                                                                                                                                                                                                                                                              1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         197
                                                                                905
                                                                                                                                       845
                                                                                                                                                                                                                                                    725
                                                                                                                                                                                                                                                                                                         665
                                                                                                                                                                                                                                                                                                                                      985
                                                                                                                                                                                                                                                                                                                                                                                           925
                                                                                                                                                                                                                                                                                                                                                                                                                                                865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       371
                                                                                                                                                                                               785
```

Š

966

δÃ

```
RESULT AAX41151
IID AAAX
XX AAX
AC AAXX
AC AAXX
XX Hum
XX Hum
KW Hum
KW Gorr
KW Gorr
KW Forr
KW Forr
KW Forr
KW Forr
KW Tebp
K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1026 gatototototgotatoagtocaccacaaacactotaactgtggttgtcttaaaagctcg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1346 actgaccagggacatcatcaaaaggaatatccagaagtgcatcagcagaggggagctcca 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; secreted protein; EST; expressed sequence tag; diagnosis; forensic; gene therapy; chromosome mapping; signal peptide; upstream regulatory sequence; cytokine activity; cell proliferation; differentiation; haematopolesis regulation; tissue growth regulation; reproductive hormone regulation; chemotactic; chemokinetic; haemostatic; thrombolytic; anti-inflammatory; tumour inhibition; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1143 gtaccatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgcacccccaa 1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1406 ggtgtctctgtcatatcagcctgtggcacagagaatgacagtggtggtcctcaaagccag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human secreted protein 5' EST SEQ ID NO:95.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-JUN-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAX41151 standard; cDNA; 424
       AAX41094 to AAX41347 represent 5' expressed sequence tags (ESTs) for human secreted proteins, and encode the proteins given in AAY12261 t
                                                                                                                                                            New nucleic acids encoding human secreted proteins - obtained cDNA libraries prepared from e.g. liver, ovary, brain, prostat kidney, lung, umbilical cord, placenta and colon tissue
                                                                                                                                                                                                                                                                                                  WPI; 1999-153778/13.
P-PSDB; AAY12318.
                                                                                                                                                                                                                                                                                                                                                                                           Duclert A, Dumas Milne Edwards J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9906548-A2
                                                                                                    Claim 1; Page 243; 824pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GEST ) GENSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acatctgcctaaatctgatgtgtccggactttcag---atccctatgtcaaagtgaacct 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ctacccaggagacaaattgccaagtggcacgtgctctgtga 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gateetgggggcacacagtgteacagecagtggtgetgaacaetggagagaggtetgega 1765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agtcttgggtgca---gcagcagaaggaactggtggagagcactggaaagagatctgtga 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgttgaatttttggttttggattctgaaagggggtcccgaaatgaggtaatcgggcagtt 1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gagcccccgcaagcctgtggccaagtggcacagtctgagcga 1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      catcgagttcctcgttatcgacttcgatcgcaccaccaagaatgaggtggtgggggggct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaagatataag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ctactacggcagaaagcgcattgccaagaagaaaaccccatgtgaagaagtgcactttgaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      {\tt acacttgcagaagatggatatcgccggtctctcaggtaatccttatgtcaaggtgaacgt}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98WO-IB01222
                                                                                                                                                                                                                                                                                                                                                                                                  Lacroix
                                                                                                                                                                                                     prostate,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1465
```

```
ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAV12514, respectively. The proteins given represent the signal peptide and an N-terminal fragment of a secreted protein. The nucleic acid sequences can be used for producing secreted human gene products. They can also be used to develop products for diagnosts and therapy. The proteins obtained may have cytokine activity, cell proliferation/differentiation activity, haematopoises regulating activity, tissue growth regulating activity, reproductive hormone activity, tissue growth regulating activity, andi-inflammatory athrombolytic activity, chemotactic/ chemokinetic activity, haemostatic and thrombolytic activity, receptor/ ligand activity, anti-inflammatory activity inhibition activity or other activities. The products can be used in forensic, gene therapy and chromosome mapping promoter sequences. The nucleic acids encoding the signal peptide can be used for directing extracellular secretion of a polypeptide or the insertion of a polypeptide or the insertion of a polyperida can be used for the accidence of the can be used for th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  polypeptide into a membrane, or importing a polypeptide into a cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 424 BP; 109 A; 112 C; 104 G; 98 T; 1 other;
                                                                                                                                                                                             Gene signature; messenger RNA; mRNA; relative abundance; human; cloning; mapping; non-biased library; diagnosis; cell typing; abnormal cell function; ss.
                                                                                                                                                                                                                                                                                               Human gene signature HUMGS07439
                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAT25277 standard; cDNA to mRNA; 318 BP
                                                01-JUN-1995.
                                                                                                                                                                                                                                                                                                                                                     25-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       122
                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 tetetetttgeatggatetgetgteagagagaaateateeaagtetaaeaagaeteeteea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 aag 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      362 tacaagtttgtgcatgtgcttwagggagttgatatttaccctgaaaacctaaatagcaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 ctctttgcctcctccctgttccaggagctggtgccctgggctctgcgctgttgttttcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctctttgcctcctccctgttccaggagctggtgccctgggctctgcgctgttgttttcag 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tacaagtttgtgcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaa 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tttgatgaaatccccacagtggtggggatcttcagtgcattttggcctggtcttcacagtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cagcacctcggacagaacacgcagtaaaaaatggctccgatcaccaccagccgggaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cagcacctcggacagaacacgcagtaaaaaaatggctccgatcaccaccagccgggaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tctctctttgcatggatctgctgtcagagaaaatcatccaagtctaacaagactcctcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tttgatgaaatccccacagtggtggggatcttcagtgcatttggcctggtcttcacagtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 361;
Pred. No. 4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 20;
4.4e-72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 424;
                                                                                                                                                                                                                                  ; frequency;
detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

11-NOV-1994;

94WO-JP01916

```
RESULT 9
AAI10603/c
ID AAI106
XX
AC AAI106
XX
AC TO AAI106
XX
DT 12-OCT
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                         Дb
                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A single-stranded DNA (or its complementary strand or the corresp. double-stranded DNA) which comprises one of the 7837 "GS" sequences given in AART19001-T26837 and which is able to hybridise to part of human genomic DNA, cDNA or mRNA is claimed. The GS (Gene Signature) sequences were obtained from 3'-directed cDNA libraries prepared from various human tissues; synthesis of cDNA was initiated from the 3'-end of mRNA by using poly(T) as the sole primer. Since the 3'-untranslated sequence is unique to a particular mRNA species, almost all the 3'-oriented cDNAs hybridise with specific mRNAs. Each library
                   12-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                3655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    is constructed so as to reflect accurately the relative abundance of different mRNAs in the particular tissue from which it was derived. The appearance frequency of a given GS in a cDNA library can be determined (esp. using primers and probes derived from the GS sequences) as a means of diagnosing abnormal cell function or for recognising different cell types.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Page 1811; 2245pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Identifying gene signatures in 3'-directed human cDNA library for diagnosis of abnormal cell function, by preparing cDNA that reflects relative abundance of corresp. mRNA in specific human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1995-206931/27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-NOV-1993;
                                                     AAI10603;
                                                                                     AAI10603 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 318 BP; 80 A; 48 C; 66 G; 115 T; 9 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matsubara K, Okubo
                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (окив/) окиво к.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (MATS/) MATSUBARA K
                                                                                                                                                                       300
                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -
                                                                                                                                                                   gccntgttt
                                                                                                                                                                                                                                                                                                                                                                                          attgtttgtctgattagccaatctcacccacccaaatggggaggtatacatgtttgaagaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                              atcaatgtgaatatcttgaatcctgttacaaatcctgcactgtattaaacatgtaaatta 3654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gatcttaatacctaatttcatcatttctgcaaaatgtactgttttagaatgtattacaat 3594
                                                                                                                                                                                                   gaccatgtt
                                                                                                                                                                                                                                                         gaagcatggtgtgagacagtgtctgttcttttgtgccagctctgtatgatgtttgtaa
                                                                                                                                                                                                                                                                                                                       c-gtgtaactcggtaattgatttgttctgatgttgtaactcaatagaagtgttttggaag
                                                                                                                                                                                                                                                                                                                                                                          attgtttgtctgattagccaatctcaccacccaaatggggaggtatacatgtttgangaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                atcaatgtgaatatcttgaatcctgttacaaatcctgcactgtattaaacatgtaaatta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gatcttaatacctaatttcatcatttctg-aaaatgtactgttttagaatgtattacaat
                                                                                                                                                                                                                                       gnagcatggtgtgaggcagtgtctgtccttttgtgccagctctgtatgntgtttgtng
                                                                                                                                                                                                                                                                                                         ctgtgtaactcagtaattgatttgtnctgatgttgtaactcantagangtgttttggaag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                   (first entry)
                                                                                                                                                                       308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93JP-0355504.
                                                                                     DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.8%;
94.2%;
                                                                                       383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 264.2; DB 16; Pred. No. 2.7e-50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 318;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                          3773
                                                                                                                                                                                                                                                                                                                                                                              179
                                                                                                                                                                                                                                                                                                                                                                                                            3714
                                                                                                                                                                                                                                                                                                                                                                                                                                                119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   59
                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
```

```
Qy
                                                  В
                                                                       QΥ
                                                                                                  Вр
                                                                                                                         QУ
                                                                                                                                                  DЬ
                                                                                                                                                                          Qy
                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                       expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                         microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene
                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to human single exon nucleic acid probes (SENP). The present sequence is one such probe. The SENPs are derived from human HeLa cells. The SENPs can be used to produce a single exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Probe; human; micervical cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-JUN-2000;
03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-FEB-2000;
26-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Probe #536 for gene expression analysis in
                                                                                                                                                                                                                                                                                                                   Sequence 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-JAN-2001;
                          972
                                                                                                                                                                                                     383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (MOLE-)
  143
                                                                        912
                                                                                                  263
                                                                                                                                                   323
                                                                                                                                                                           797
                                                  203
                                                                                                                                                                                                                                                                                                                                            ftp.wipo.int/pub/published_pct_sequences.
tagagagatcatcaagagaaatgtt
                                                                                                              aattggccttgcacttcacaat-tttgagtttttgacaggtttttcaaga-gatgatatcat
                                                                                                                                                                atccagcttttgatgagacctttacattctatgggataccctacacccaaatcc---aag
                                                                                                                                                                                                                tgacgatcctcccagagaagaagcataaagtgaaaactagagtgctgagaaaaaccttgg 796
                                               ATCCAGCTTTTGATGAGACCTTTACATTCTATGGGATACCCTACACCCAAATCCNNAAGA
                                                                                                                                                                                                     TGACGATCCTCCCAGAGAAGAAGCATAAAGTGAAAACTAGAGTGCTGAGAAAAACCTTGG 324
                                                                                                    ATTGGNCCTTGCACTTCACAATNTTTGAGTTTTGACAGGTTTTCAAGANGATGATATCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genome-derived single exon nucleic acid probes useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULAR DYNAMICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQ ID No 536; 487pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; 2000US-0180312.
; 2000US-0207456.
; 2000US-0608408.
; 2000US-0632366.
; 2000US-0234687.
; 2000US-0236359.
                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                   BP; 125 A; 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2000GB-0024263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2001WO-US00670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               microarray; gene expression; cervical epithelial cell;
                                                                                                                                                                                                                                                                 5.6%;
95.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in human cervical epithelial
                                                                                                                                                                                                                                                                                                                   Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INC
                                                                                                                                                                                                                                                     Score 216.6;
Pred. No. 1.6e
0; Mismatches
                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                    58
  119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rank DR
                                                                                                                                                                                                                                                                                                                   ç;
                                                                                                                                                                                                                                                                                                                    123
                                                                                                                                                                                                                                                 ; LL
1.6e-39;
6;
                                                                                                                                                                                                                                                                                                                    T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human
                                                                                                                                                                                                                                                                                                                    other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cervical cell sample
                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                      5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                s -
                                                                                                                                                                                                                                                     Gaps
                                                                        971
                                                                                                  204
                                                                                                                          911
                                                                                                                                                   264
                                                                                                                                                                            853
```

ω

RESULT 10 AAI31857/c

```
g
                                                δã
                                                                                       g
                                                                                                                  Qγ
                                                                                                                                                            В
                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                    γ
                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-FEB-2000; 2000US-0180312.

26-MAY-2000; 2000US-0207456.

30-JUN-2000; 2000US-0608408.

03-AUG-2000; 2000US-0632366.

21-SEB-2000; 2000US-0234687.

27-SEB-2000; 2000US-0236359.

04-OCT-2000; 2000GB-0024263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to single exon nucleic acid probes (SENP). The present sequence is one such probe. The probes are useful for producing a microarray for predicting, measuring and displaying gene expression in samples derived from human placenta. The probes are useful for antenatal diagnosis of human genetic disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 25; SEQ ID No 543; 654pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (MOLE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-JAN-2001; 2001WO-US00663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200157272-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Probe; microarray;
genetic disorder; ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAI31857 standard;
                                     972 tagagagatcatcaagagaaatgtt 996
                                                                                                                             912
                                                                                                                                                                                                                                                                                                      143
                                                                                         203
                                                                                                                                                              263
                                                                                                                                                                                                    854
                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                         797
                                                                                                                                                                                                                                                                                                                                                                    Local Local;
                                                                                                                                                                                                                                                      atccagcttttgatgagacctttacattctatgggataccctacaccccaaatcc---aag 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SG,
                                                                                                          tggggaagttctaattcctctctcgggaattgaattatctgaaggaaaaatgttaaatgaa 971
                                                                                                                                                              ATTGGNCCTTGCACTTCACAATNTTTGAGTTTTGACAGGTTTTCAAGANGATGATATCAT
                                                                                                                                                                                   aattggccttgcacttcacaat-tttgagttttgacaggttttcaaga-gatgatatcat 911
                    TAGAGAGATCATCAAGAGAAATGNT 119
                                                                                       TGGGGAAGTTCTAATTCCTCTCTCGGGAATTGAATTATCTGAAGGAAAAATGTTAATGAA 144
                                                                                                                                                                                                                                     ATCCAGCTTTTGATGAGACCTTTACATTCTATGGGATACCCTACACCCAAATCCNNAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genome-derived single exon nucleic acid probes useful zing gene expression in human placenta -
                                                                                                                                                                                                                                                                                                                                                                                   h 5.6%;
Similarity 95.8%;
54; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BP; 125 A; 71 C; 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to measure gene expression in human placenta sample
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human; placenta; antenatal diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВP
                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                 Score 216.6; DB 2
Pred. No. 1.6e-39;
D; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ر.
و
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         123 T; 6 other;
                                                                                                                                                                                                                                                                                                                                                                                                                  DB 22; Length 383;
                                                                                                                                                                                                                                                                                                                                                                                 6,
                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                               5;
                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                              204
                                                                                                                                                                                                                                     264
                                                                                                                                                                                                                                                                                                                                                                                 3,
                                                                                                                                                                                                                                                                                                        AAIOO535/c
IID AAIOO5
XX
AC AAIOO5
XX
AC AAIOO5
XX
Probe
XX
Probe
XX
Probe
XX
Inflam
XX
Homo s
X
Вþ
                             Q
                                                                    Вb
                                                                                                    Qγ
                                                                                                                                         Ъ
                                                                                                                                                                             Ş
                                                                                                                                                                                                                Best Local
Matches 2
                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAI00535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Penn SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (MOLE-)
263
                                                                                                                                           383
                                                                                                                                                                               737
                                                                                                          797
                                                                                                                                                                                                                  254;
```

RESULT

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      specification, at ftp.wir-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-FEB-2000; 2000US-0180312.
26-MAY-2000; 2000US-0207456.
30-JUN-2000; 2000US-0608408.
03-AUG-2000; 2000US-0632366.
21-SEP-2000; 2000US-0234687.
27-SEP-2000; 2000US-0236359.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention relates to novel single exon nucleic acid probes. The present sequence is one such probe. The probes are useful for measuring human gene expression in a human breast sample, where the probe hybridises at high stringency to a nucleic acid expressed in the human breast. The probes are useful for predicting, diagnosing, grading, staging, monitoring and prognosing diseases of the human breast, particularly those diseases with polygenic aetiology. The diseases include: breast cancer, disorders of development, inflammatory diseases of the breast, fibrocystic changes, proliferative breast disease and non-carcinoma tumours.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 383 BP; 125 A; 71 C; 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 25; SEQ ID No 526; 322pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel single exon nucleic acid probe used to measuring gene expression in a human breast -  \\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Probe; human; breast disease; breast cancer; development disorder; ss; inflammatory disease; proliferative breast disease; non-carcinoma tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2001-476286/51.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200157270-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Probe #526 used to measure gene expression in human breast sample
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAI00535 standard; DNA; 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-JAN-2001; 2001WO-US00661
   912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                             tgacgatcctcccagagaagaagcataaagtgaaaactagagtgctgagaaaaaaccttgg 796
tggggaagttctaattcctctctcgggaattgaattatctgaaggaaaaatgttaatgaa
                                                                                            aattggccttgcacttcacaat-tttgagttttgacaggttttcaaga-gatgatatcat 911
                                                                                                                                                                                                             atccagcttttgatgagacctttacattctatgggataccctacaccccaaatcc---aag 853
                                                                                                                                                                                                                                                                                                  TGACGATCCTCCCAGAGAAGAAGCATAAAGTGAAAACTAGAGTGCTGAGAAAAACCTTTGG
                                                             ATTGGNCCTTGCACTTCACAATNTTTGAGGTTTTGACAGGTTTTCAAGANGATGATATCAT
                                                                                                                                                                              ATCCAGCTTTTGATGAGACCTTTACATTCTATGGGATACCCTACACCCAAATCCNNAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                   n 5.6%;
Similarity 95.8%;
54; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hanzel DK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                               Score 216.6; DB 2
Pred. No. 1.6e-39;
0; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      123 T; 6 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 22; Length 383;
                                                                                                                                                                                                                                                                                                                                                                                                                      6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
   971
                                                             204
                                                                                                                                                                              264
                                                                                                                                                                                                                                                                                               324
                                                                                                                                                                                                                                                                                                                                                                                                                      ω
```

```
RESULT 12
AAF58252/c
ID AAF582
XX AAF582
XX AAF582
XX D1 24-APR
XX Electr
KW Gene e
XX Synthe
PN W02001
XX E3-JUI
PP 26-JUI
PR 17-MAF
XX Umek F
XX Nucled
PT A Sing
XX Outled
PT A Sing
XX
                              οy
                                                                       В
                                                                                                       Qy
                                                                                                                                              В
                                                                                                                                                                               Ş
                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to a composition comprising two nucleic acids each containing an electron-transfer group (ETM) having different redox potentials. The invention is used for electronic detection of nucleic acids, especially of substitutions (mismatches) and single-nucleotide polymorphisms, e.g. for genotyping, monitoring gene expression.
                                    1705
                                                                                                           1645
                                                                                                                                                                                  1585
                                                                                                                                                                                                                                                      1525 cctttttgttgttgttgttgctagaaatggattgaattagtagaccagaaagtaact 1584
                                                                                                                                                                                                                                                                                                                                                                                       Sequence 936 BP; 4 A; 139 C; 10 G; 7 T; 776 other,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a single surface
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nucleic acids containing electron-transfer hybridization assays, e.g. for genotyping,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-JUL-1999;
17-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene expression; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Electron-transfer group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oligonucleotide D1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAF58252;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAF58252 standard; DNA; 936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 6; Page 127; 159pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-159728/16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-JUL-2000; 2000WO-US20476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200107665-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CLIN-) CLINICAL MICRO SENSORS
809
                                                                         899
                                                                                                                                                                                                                       788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  143 TAGAGAGATCATCAAGAGAAATGNT 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         203
                                                                                                                                                                                                                   tagagagatcatcaagagaaatgtt 996
aatactgtgccagaatcccaaattataaatgtgacaatctcattggaacatgtcacaaaa 1760
                                                                     atattcaatatctccttcagattaccagtgatataactaggaatagtcagacattttatg
                                                                                                                                            tcaaatgtgtattatgataatttccctatttattagaagagttggataaattttcataag 1644
                                                                                                                                                                                                                                                                                            Similarity 7; Conserv
                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000US-0190259.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0145695
                                                                                                                                                                                                                                                                                          4.6%; Sci
0.9%; Pre-
ative 531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ETM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ВP
                                                                                                                                                                                                                                                                                          Score 177.4; DB 22;
Pred. No. 1.5e-30;
31; Mismatches 247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mismatch;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genotyping;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            group, useful as labels allowing repeat analyses
                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                               Length 936;
                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                            Gaps
549
                                                                       609
                                                                                                       1704
                                                                                                                                              669
                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
AAF58254/c
ID AAF582
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1945
                                                                                                                                                                                                                                                                                                                                                gene expression;
                                                                                                                                                                                                                                                                                                                                                                                                      Oligonucleotide D1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1765
                                WPI; 2001-159728/16
                                                                                                                                            26-JUL-1999;
17-MAR-2000;
                                                                                                                                                                                                                                      01-FEB-2001
                                                                                                                                                                                                                                                                           WO200107665-A2
                                                                                                                                                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                         24-APR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAF58254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAF58254 standard; DNA; 936
                                                                       Umek RM
                                                                                                                                                                                                  26-JUL-2000; 2000WO-US20476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gtata 2309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MWWWW
                                                                                                                                          99US-0145695
2000US-0190259
```

```
Nucleic acids containing electron-transfer group, useful as labels in
                                                                                                                                                                                                                                                                                                                                                      Electron-transfer group; ETM; mismatch; genotyping;
                                                                                                       (CLIN-) CLINICAL MICRO SENSORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agttaatgtgattaagatttaaaaacgaaaagtatgccttgccttgtgaaaatttatcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          taaagaaataaacttcaactagaaatccagttagaagtgcaattttcttataggaaatag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gaacactgtggctgaaatataatttttctcccccctaaggttacatgtgagtcaaaattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ctggtcatttcagtttggtttgtaattatttgatgcaattttatcataagagtaactcag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tgtaaaatataacctcacataagaaccatggccttggattattcactgcctgtcacaagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctccagtttgtatttattaattctgtcatgtgcaaatggttgtcctgcatataaaagtat 1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tttatcttcaggttggggaaatcaatttttctttaatccaaagatactaaaaaaatgtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        369
```

THE XX COCOCOCX BX PT

Matches

```
Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention relates to a composition comprising two nuclei acids each containing an electron-transfer group (ETM) having different redox potentials. The invention is used for electronic detection of nucleic acids, especially of substitutions (mismatches) and single-nucleotide polymorphisms, e.g. for genotyping, monitoring gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1525 cctttttgttgttgttgttgttgctagaaatggattgaattagtagaccagaaagtaact 1584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 936 BP; 4 A; 144 C; 7 G; 5 T; 776 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 6; Page 127; 159pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hybridization assays,
a single surface -
gtata
                                                                                                                                                                                                  tgtaaaatataacctcacataagaaccatggccttggattattcactgcctgtcacaagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                taaagaaataaacttcaactagaaatccagttagaagtgcaattttcttataggaaatag
                                                                                                                                                                        gaacactgtggctgaaatataatttttctcccccctaaggttacatgtgagtcaaaattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     attcatttcaaaaggacagtgaacaagctgagaaattattttatcaaagggctgagttga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ctccagtttgtatttattaattctgtcatgtgcaaatggttgtcctgcatataaaagtat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tttatcttcaggttgggggaaatcaatttttcttttaatccaaagatactaaaaaatgtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        aatactgtgccagaatccccaaattataaatgtgacaatctcattggaacatgtcacaaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 tcaaatgtgtattatgataatttccctatttattagaagagttggataaattttcataag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        atattcaatatctccttcagattaccagtgatataactaggaatagtcagacattttatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative 531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for genotyping, allowing repeat analyses
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 177.4; DB 22;
Pred. No. 1.5e-30;
31; Mismatches 247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1824
                                                                   9
                                                                                                                                                                     69
                                                                                                                                                                                                                                                                                                                                                                       189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 14
AAF58257/c
ID AAF58257;
XX AAF58257;
XX 24-APR-2001 (first entry)
XX 24-APR-2001 (first entry)
XX 24-APR-2001; 2000W0-U5204.
XX Electron-transfer group; I
KW gene expression; ss.
XX 24-APR-2001.
XX W0200107665-A2.
XX WPI; 2001-1999; 99U5-01456-PR 17-MAR-2000; 2000U5-01902
XX WPI; 2001-159728/16.
XX WPI; 2001-1
                                                                                                                                                                                                                 рь
                 Дb
                                                                                                                Вρ
                                                                                                                                                            Ωy
                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                  рь
                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1525 cctttttgttgttgttgttgctagaaatggattgaattagtagaccagaaagtaact 1584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to a composition comprising two no acids each containing an electron-transfer group (ETM) having different redox potentials. The invention is used for electronic detection of nucleic acids, especially of substitutions (mismatc) and single-nucleotide polymorphisms, e.g. for genotyping, monitoring gene expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic acids containing electron-transfer group, useful as labels in hybridization assays, e.g. for genotyping, allowing repeat analyses on a single surface -
                                                          1765 agttaatgtgattaagatttaaaaacgaaaagtatgccttgccttgtgaaaatttatcca
                                                                                                                                                                                                                                                                      1645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 6; Page 127; 159pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26-JUL-1999; 99US-0145695
17-MAR-2000; 2000US-0190259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-JUL-2000; 2000WO-US20476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity es 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                 tcaaatgtgtattatgataatttccctatttattagaagagttggataaattttcataag 1644
                 aatactgtgccagaatcccaaattataaatgtgacaatctcattggaacatgtcacaaaa
                                                                                                                                                                                                                                                             atattcaatatctccttcagattaccagtgatataactaggaatagtcagacattttatg
                                                                                                                                                                                                                                                                                                                                                                                                                      WWWWW 4
                                                                                                                                                                                                                    936 BP; 5 A; 142 C; 7 G; 6 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.6%; S. larity 0.9%; Pr. Conservative 531;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               group; ETM; mismatch; genotyping;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SENSORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 177.4;
Pred. No. 1.5e
31; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .4; DB 22;
L.5e-30;
thes 247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                other;
```

1765

1825

488

1705

899

608

1645

728

1585

δÃ

2125

188

2185

g 20 В Qy В δÃ В ρy Вb Qy Вb Qy 망 Qy В ρ В δÃ Вb δÃ

2065

1945

368

Length

0,

Gaps

0

729

669

1824

489

1764 609 1704

549

(mismatches) two nucleic

Db δÃ Вb Qy В

```
RESULT 15
AAF58259/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                     δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                          Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
Qy
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                 Electron-transfer group; ETM; mismatch; genotyping;
gene expression; ss.
                                                                                                                                                                                                                                                             Oligonucleotide D2004
                                                                                                                                                                                                                                                                                                                    AAF58259 standard; DNA; 936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1825
                                                                                                                         26-JUL-1999; 99US-0145695
17-MAR-2000; 2000US-0190259
                                                                                                                                                                        01-FEB-2001.
                                                                                                                                                                                                                                                                              24-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                  2305 gtata 2309
                                  Nucleic acids containing electron-transfer group, useful as labels in hybridization assays, e.g. for genotyping, allowing repeat analyses or
                                                                                                                                                                                           WO200107665-A2
        Example 6; Page 128; 159pp; English
                                                                WPI; 2001-159728/16
                                                                                                                                                     26-JUL-2000; 2000WO-US20476
                                                                                                      (CLIN-) CLINICAL MICRO SENSORS
                                                                                                                                                                                                                                                                                                                                                                                                      83
                          single surface
                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tttatcttcaggttgggggaaatcaatttttctttaatccaaagatactaaaaaaatgtc 1884
                                                                                                                                                                                                                                                                                                                                                                  WWWWW 4
                                                                                                                                                                                                                                                                                                                                                                                                      taaagaaataaacttcaactagaaatccagttagaagtgcaattttcttataggaaatag
                                                                                                                                                                                                                                                                                                                                                                                                                                          attcatttcaaaaggacagtgaacaagctgagaaattattttatcaaagggctgagttga 2064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tgtaaaatataacctcacataagaaccatggccttggattattcactgcctgtcacaagc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gaacactgtggctgaaatataatttttctcccccctaaggttacatgtgagtcaaaattt 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctggtcatttcagtttggtttgtaattatttgatgcaattttatcataagagtaactcag 200.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     expression;
                                                                                                                                                                                                                                                                             (first entry)
                                                                                                       INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2184
                                                                                                                                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     369
```

```
δÃ
                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                  р
                                                                                                                                                                                                                                                                                                                                                                                                          ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        999999888
                                                                                                         B
                                                                                                                                  δÃ
                                                                                                                                                               밁
                                                                                                                                                                                                                   밁
                                                    Вþ
                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to a composition comprising two nucleic acids each containing an electron-transfer group (ETM) having different redox potentials. The invention is used for electronic detection of nucleic acids, especially of substitutions (mismatches) and single-nucleotide polymorphisms, e.g. for genotyping,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 936 BP; 6 A; 138 C; 8 G;
                         2305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                monitoring gene
                                                                                                                                                                                                                                                                                                                                                                                    428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
nes 7; Conserv
                                                    89
                      gtata 2309
                                                                                                                                                                                                                                    ctggtcatttcagtttggtttgtaattatttgatgcaattttatcataagagtaactcag
                                                                                                                                                                                                                                                                                                                                                                                                                                        tttatcttcaggttgggggaaatcaatttttctttaatccaaagatactaaaaaaatgtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agttaatgtgattaagatttaaaaacgaaaagtatgccttgccttgtgaaaatttatcca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aatactgtgccagaatccccaaattataaatgtgacaatctcattggaacatgtcacaaaa 1764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             atattcaatatctccttcagattaccagtgatataactaggaatagtcagacattttatg 1704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tcaaatgtgtattatgataatttccctatttattagaagagttggataaattttcataag 1644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cctttttgttgttgttgttgttgctagaaatggattgaattagtagaccagaaagtaact 1584
WWWWW 4
                                                    taaagaaataaacttcaactagaaatccagttagaagtgcaattttcttataggaaatag
                                                                                                          tgtaaaatataacctcacataagaaccatggccttggattattcactgcctgtcacaagc
                                                                                                                                                                                                                     ctccagtttgtatttattaattctgtcatgtgcaaatggttgtcctgcatataaaagtat 1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.6%; Score 177.4; DB 22; ilarity 0.9%; Pred. No. 1.5e-30; Conservative 531; Mismatches 247;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   188
                                                                                                          69
```

Job time: 5761 sec

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM nucleic - nucleic search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database :
                                       00000000000000
                                                                                                                                                                                                                        00000
      and is derived
                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                              Score
                                                                          seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Issued_Patents_NA:*
1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
                                                                                                                                                                                                                                                                                                                                              Match Length DB
                                                                                                                                                                                                                                                                                                                      100.0
                                                                                                                                                                                                                                                                                                                                                          Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-680-121-1
3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     December 12, 2001, 10:54:04; Search time 130 Seconds (without alignments) 6778.661 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            351203 seqs, 113238999 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                   /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/BCTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/backfiles1.seq:*
     US-08-487-826B-13
US-08-817-913-14
US-08-817-913-14
US-08-817-913-15
US-08-817-913-17
US-08-817-913-17
US-08-617-860B-32
US-08-617-860B-32
US-08-617-860B-32
US-08-617-860B-32
US-08-52-463-1
US-08-52-463-1
US-08-52-463-1
US-08-52-679-32
US-08-52-679-32
US-08-52-679-32
US-08-52-679-32
US-08-107-755A-32
US-08-107-755A-32
US-08-107-755A-32
US-08-107-755A-32
US-08-107-755A-32
US-08-852-629-11
US-08-852-629-11
US-08-852-639-11
US-08-817-926-27
US-08-817-926-27
US-08-970-725-1
                                                                                                                                                                                                                                                                                                                      US-09-036-315-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sw model
                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.5
Compugen Ltd.
Patent No. 5266464
Sequence 13, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 17, Appli
Sequence 17, Appli
Sequence 17, Appli
Sequence 18, Appli
Sequence 17, Appli
Sequence 17, Appli
Sequence 17, Appli
Sequence 18, Appli
Sequence 19, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 15, Appli
Sequence 17, Appli
Sequence 18, Appli
Sequence 19, Appli
Sequence 11, Appli
Sequence 11, Appli
Sequence 12, Appli
Sequence 13, Appli
Sequence 14, Appli
Sequence 15, Appli
Sequence 17, Appli
                                                                                                                                                                                                                                                                                                                                            Description
```

RESULT 1 US-09-036-315-1 US-09-036-315-1 Sequence 1, Application US/09036315 Sequence 1, Application US/09036315 Sequence 1, Application US/09036315 Sequence 1, Application: APPLICANT: French, Cynthia K. APPLICANT: French, Cynthia K. APPLICANT: Schneider, Patrick A APPLICANT: Yamamoto, Karen K. TITLE OF INVENTION: Prostate Ca NUMBER OF SEQUENCES: 27 CORRESPONDENCE ADDRESS: ADDRESSEE: Townsend and Towns STREET: Two Embarcadero Cente CITY: San Francisco STATE: California COUNTRY: USA ZIP: 94111-3834 COMPUTER: IBM PC Compatible OPERATION TYPE: Floppy disk COMPUTER: IBM PC Compatible OPERATION SYSTEM: PC-DOS/MS-1 SOFTWARE: PatentIn Release #1 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/036 FILING DATE: 06-MAR-1998 CLASSIFICATION NUMBER: US/09/036 FILING DATE: 15-MAY-1997 PRIOR APPLICATION NUMBER: US 60/041 APPLICATION NUMBER: US 60/041 APPLICATION NUMBER: US 60/041 FILING DATE: 19-MAY-1997 ATTORNEY/AGENT INFORMATION: NAME: Storella, John R. REFERENCE/DOCKET NUMBER: 32,944 REFERENCE/DOCKET NUMBER: 32,944 REFERENCE/DOCKET NUMBER: 32,944 REFERENCE/DOCKET NUMBER: 0180 TELEPAX: (415) 576-0200 TELEPAX: (415) 576-0200 TELEPAX: (415) 576-0200 TELEPAX: 3891 base pairs TYPE: nucleic acid STRANDEDNESS: single TOPOLOGY: linear MOLECULE TYPE: CDN AME/KEY: CDS COTHER INFORMATION: /product=	C 28 41.4 1.1 2799 5 C 29 40.8 1.0 602 1 30 40.8 1.0 642 1 C 31 40.8 1.0 2993 1 G 32 40.8 1.0 3000 1 G 35 40.8 1.0 3000 1 G 35 40.8 1.0 3001 1 G 36 40.8 1.0 4673 1 G 39 40.8 1.0 7015 4 G 39 40.6 1.0 837 4 G 40.8 1.0 5852 1 G 39 40.6 1.0 6216 4 G 40 40.6 1.0 6216 4 G 39 40 5 1.0 6216 4 G 39 40 6 1.0 3942 3 G 5 1.0 3942 3
s/09036315 nthia K. Patrick A. Karen K. rostate Cancer-Specific Marker 27 and Townsend and Crew LLP 27 and Townsend and Crew LLP 27 e and Townsend and Crew LLP 27 and Townsend and Crew LLP 27 and Townsend and Crew LLP 28 cos/MS-DOS 29 Release #1.0, Version #1.30 TA: US/09/036,315 -1998 : US 60/047,811 -1997 US 60/041,246 -1997 TION: n R. 32,944 33,944 32,944 32,944 32,944 32,944 32,944 32,944 32,944 32,944 33,944 33,944 32,944 33,944 34,945 34,94	PCT-US95-02708-1 US-08-764-100-8 US-08-764-100-1 US-08-764-100-7 US-08-764-100-1 US-08-764-100-1 US-08-764-100-1 US-07-638-431-1 PCT-US92-00018-1 US-07-638-431-1 US-07-638-431-1 US-07-638-106-2 US-08-998-416-305 US-07-867-106-2 US-08-998-416-288 US-09-213-053-1 US-08-998-416-1137 US-08-998-416-1137 US-08-998-416-1137 US-08-98-416-1137 US-08-98-416-1137 US-08-98-416-1137 US-08-98-686-968C-189
	Sequence 1, Appli Sequence 13, Appli Sequence 7, Appli Sequence 2, Appli Sequence 10, Appli Sequence 11, Appli Sequence 1, Appli Sequence 1, Appli Sequence 1, Appli Sequence 305, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 1, Appli

```
δõ
                                                  В
                                                                                Ωy
                                                                                                                В
                                                                                                                                            Qy
                                                                                                                                                                                Дb
                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                          DЪ
                                                                                                                                                                                                                                                                                                                                        γQ
                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΡЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-036-315-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                      961
                                                  901
                                                                                  901
                                                                                                                  841
                                                                                                                                                  841
                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                  781
                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۲
                                                Ctgagaaaaaccttggatccagcttttgatgagacctttacattctatgggataccctac 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ctetttgeeteeteetgtteeaggagetggtgeetgggeetgggetgetgttttteag 60
   atgttaatgaatagagagatcatcaagagaaatgttaggaagtcttcaggacggggtgag
                                                                                                                                   acccaaatccaagaattggccttgcacttcacaattttgagttttgacaggttttcaaga 900
                                                                                                                                                                                                                                                cal Similarity
3891; Conserv
                                                                                                                                                                                                                                                                                                                                                                                CAAGAGAAGCTGGGAACTCTCTTCTTCTTCTTAGAATACAACTTCGAGAGAAAAGCATTT
                                                                                                                                                                                                                                                                                                                                                                                               caagagaaagctgggaactctcttcttcttcttcttcttagaatacaacttcgagagaaaagcattt
                                                                                                                                                                                                                                                                                                                                                                                                                                                               aaagagtcagtttcccctgagagtttaaaagtccagcacttcccttacttcagaagagaaa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aaacctggcagtccttctgatctggagaatgcaaccccgaagctctttttagaaggggaa 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aagaagtttggagcagatgataaaaaatgaagtaaaggaataagccagctgtgccaaagaat 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACAAGTTTGTGCATGTGCTTAAGGGAGTTGATATTTACCCTGAAAACCTAAATAGCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tacaagtttgtgcatgtgcttaagggagttgatatttaccctgaaaacctaaatagcaaa 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTCTCTTTGCATGGATCTGCTGTCAGAGAAAATCATCCAAGTCTAACAAGACTCCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tctctctttgcatggatctgctgtcagagaaaatcatccaagtctaacaagactcctcca 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tttgatgaaatccccacagtggtgggggatcttcagtgcattttggcctggtcttcacagtc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCACCTCGGACAGAACACGCAGTAAAAAATGGCTCCGATCACCACCAGCCGGGAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cagcacctcggacagaacacgcagtaaaaaattggctccgatcaccaccagccgggaagaa 180
                                                                                                                  ACCCAAATCCAAGAATTGGCCTTGCACTTCACAATTTTGAGTTTTGACAGGTTTTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGAGTCAGTTTCCCCTGAGAGTTTAAAGTCCAGCACTTCCCTTACTTCAGAAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAACCTGGCAGTCCTTCTGATCTGGAGAATGCAACCCCGAAGCTCTTTTTAGAAGGGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGAAGTTTGGAGCAGATGATAAAAATGAAGTAAAGAATAAGCCAGCTGTGCCAAAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTGATGAAATCCCCACAGTGGTGGGGATCTTCAGTGCATTTGGCCTGGTCTTCACAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 3891; ; Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3891;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                  960
                                                                                                                                                                                                                                                                              780
                    1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      480
                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                              660
                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
   Вb
                            ρy
                                                                                            δÃ
                                                                                                                               밁
                                                                                                                                                            δÃ
                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                 1921
                                                                                                                                                                 1921
                                                                                                                                                                                                                                 1861
                                                                                                                                                                                                                                                               1801
                                                                                                                                                                                                                                                                                                                               1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1081
                                                                                                                                                                                                 1861
                                                                                                                                                                                                                                                                                               1801
                                                                                                                                                                                                                                                                                                                                                               1741
                                                                                                                                                                                                                                                                                                                                                                                               1681
                                                                                                                                                                                                                                                                                                                                                                                                                             1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1081
   2041
                                                                                               1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    961 ATGTTAATGAATAGAGAGATCATCAAGAGAGAATGTTAGGAAGTCTTCAGGACGGGGTGAG
TATTTTATCAAAGGGCTGAGTTGAGAACACTGTGGCTGAAATATAATTTTTCTCCCCCCT
                    tattttatcaaagggctgagttgagaacactgtggctgaaatataatttttctcccccct
                                                                                                                            tggttgtcctgcatataaaagtatctggtcatttcagtttggtttgtaattatttgatgc
                                                                                                                                                                                                                                                                                                                                                                                           CTAGGAATAGTCAGACATTTTATGAATACTGTGCCAGAATCCCAAATTATAAATGTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ttgcaagcttgggaaatcaagctacctttttgttgttgttgttgttgttgctagaaatggatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gagttggaacttaaaggtttttactaggcaaggagaaatttrcttrcttcttattgga

[ | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 taccccaggagacaaattgccaagtggcacgtgctctgtgatggttagcatcctagccgt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ttagtcttgggtgcagcagcagaaggaactggtggagagcactggaaagagatctgtgac
                                                                                                                                                                                                              ccttgccttgtgaaaatttatccatttatcttcaggttggggaaatcaatttttcttta
                                                                                                                                                                                                                                                                                                                                              atctcattggaacatgtcacaaaaagtttaatgtgattaagatttaaaaaacgaaaagtatg
                                                                                                                                                                                                                                                                                                                                                                                                            ctaggaatagtcagacattttatgaatactgtgccagaatccccaaattataaatgtgaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                           tactgatcretetetgetateagtccaccacaaacactctaactgrgyttytettaaaa
                                                                 AATTTTATCATAAGAGTAACTCAGATTCATTTCAAAAGGACAGTGAACAAGCTGAGAAAT
                                                                                aattttatcataagagtaactcagattcatttcaaaaggacagtgaacaagctgagaaat
                                                                                                                                                                                               CCTTGCCTTGTGAAAATTTATCCATTTATCTTCAGGTTGGGGGAAATCAATTTTTCTTTA
                                                                                                                                                                                                                                                                                                                               ATCTCATTGGAACATGTCACAAAAAGTTAATGTGATTAAAGATTTAAAAACGAAAAGTATG
```

2040

1980

2040

2100

1860 1920 1920 1740 1800

1800

1860

1680

1680

1620

1620

1440 1440 1500 1500 1560

1560

1260 1260

1380

1200

δÃ

```
В
                      ρ
                                      Q
                                                                        Qy
                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                        Вþ
                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                       В
뫄
                              Вb
                                                В
                                                       Ωy
                                                                В
                                                                                  Дb
                                                                                        Qy
                                                                                                 ДЬ
                                                                                                          Qy
                                                                                                                    Db
                                                                                                                          γQ
                                                                                                                                   DЬ
                                                                                                                                           Q
                                                                                                                                                     Вþ
                                                                                                                                                           δÃ
                                                                                                                                                                     Ъ
                                                                                                                                                                            Qy
                                                                                                                                                                                    B
                                                                                                                                                                                            δõ
                                                                                                                                                                                                       Ъ
                                                                                                                                                                                                             Ωy
                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                 δÃ
3121
        3121
                3061
                                 3001
                                         3001
                                                 2941
                                                                                                                            2701
                                                                                                                                    2641
                                                                                                                                                      2581
                                                                                                                                                             2581
                                                                                                                                                                                      2461
                                                                                                                                                                                               2461
                                                                                                                                                                                                       2401
                                                                                                                                                                                                                2401
                                                                                                                                                                                                                        2341
                                                                                                                                                                                                                                2341
                                                                                                                                                                                                                                         2281
                                                                                                                                                                                                                                                 2281
                                                                                                                                                                                                                                                         2221
                                                                                                                                                                                                                                                                 2221
                                                                                                                                                                                                                                                                          2161
                                                                                                                                                                                                                                                                                           2101
                                                                                                                                                                                                                                                                                                   2101
                                                          2941
                                                                   2881
                                                                           2881
                                                                                   2821
                                                                                           2821
                                                                                                    2761
                                                                                                            2761
                                                                                                                    2701
                                                                                                                                             2641
                                                                                                                                                                      2521
                                                                                                                                                                              2521
                                                                                                                                                                                                                                                                                  2161
tettagagaagtatgagtggaaettgagtacagttgaattattaaatatgcaagttagaa
                                                                                                                    catatyttcacycaaaatatycttagyctytcaaattaycacaacaaayaatytytttca
                                                                                                                                                                                      ttaaccaaccaaccaatgtaagactaccaaaatcgttcaagagcaattctaatatatta
                                                                                                                                                                                                       gtacccagagtcggcatggccacctaagtcttcatttaatttattgtcccccagaaaaga
                                                                                                                                                                                                                                        tttgagaatgtgttttgatatcacagtgtttgtaaattctatgaaaatgcattttccaaa
                                                                  TTTGAGAATGTGTTTGATATCACAGTGTTTGTAAATTCTATGAAAAATGCATTTTCCAAA
        3180
                                                                                                                    2760
                                                                                                                                                             2640
                                                                                                                                                                                                               2460
                                                                                                                                                                                                                                2400
                                                                                                                                                                                                                                                                                  2220
                                                                                                                                                                                                                                                                                                   2160
                                         3060
                                                 3000
                                                                          2940
                                                                                           2880
                                                                                                                            2760
                                                                                                                                    2700
                                                                                                                                            2700
                                                                                                                                                                      2580
                                                                                                                                                                              2580
                                                                                                                                                                                      2520
                                                                                                                                                                                               2520
                                                                                                                                                                                                       2460
                                                                                                                                                                                                                        2400
                                                                                                                                                                                                                                         2340
                                                                                                                                                                                                                                                2340
                                                          3000
                                                                  2940
                                                                                  2880
                                                                                                            2820
                                                                                                                                                     2640
```

δÃ

δÃ

1060

ctaactgtggttgtcttaaaagctcgacatctgcctaaatctgatgtgtccggactttca

```
RESULT 2
5266464-1
                                ; SEQ ID NO:1:
; LENGTH: 2599
5266464-1
                                                                                                      ; Patent No. 5266464 ; APPLICANT: HOUSEY, (); TITLE OF INVENTION:
                                                                                                                                                   밁
                                                                                                                                                               Q
                                                                                                                                                                            В
                                                                                                                                                                                      γ
                                                                                                                                                                                                      В
                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                       рь
                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                     дь
                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωy
                                                                                                ; AND
Query Match
Best Local S
Matches 97
                                            ND ACTIVATORS

NUMBER OF SEQUENCES: 3

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/392,07

FILING DATE: 10-AUG-16989

PRIOR APPLICATION DATA:
APPLICATION NUMBER: 154,206

FILING DATE: 10-FEB-1988

EO ID NO:1:
                                                                                                                                                                                                                                                       3601
                                                                                                                                                                                                                                                                                                                                                                                                                                            3181
                                                                                                                                                                                                                                                                                                                                                                                                                                                         3181
                                                                                                                                                   3841
                                                                                                                                                               3841
                                                                                                                                                                            3781
                                                                                                                                                                                                      3721
                                                                                                                                                                                                                   3721
                                                                                                                                                                                                                                3661
                                                                                                                                                                                                                                                                                                            3481
                                                                                                                                                                                                                                                                                                                                      3421
                                                                                                                                                                                                                                                                                                                                                  3421
                                                                                                                                                                                                                                                                                                                                                                3361
                                                                                                                                                                                                                                                                                                                                                                                         3301
                                                                                                                                                                                                                                                                                                                                                                                                      3301
                                                                                                                                                                                                                                                                                                                                                                                                                   3241
                                                                                                                                                                                                                                                                     3601
                                                                                                                                                                                                                                                                                  3541
                                                                                                                                                                                                                                                                                               3541
                                                                                                                                                                                                                                                                                                                        3481
                                                                                                                                                                                                                                                                                                                                                                            3361
                                                                                                                                                   ggtgtgtgagacagtgtctgttcttttgtgccagctctgtatgatgtttgtaagaccatg
                                                                                                                                                                                                            tgtctgattagccaatctcacccacccaaatggggaggtatacatgtttgaagaacgtgta
                                                                                                                                                                                                                                                       agtcaaatggccattttatgtatgtgcatttggtatcatgggccgtggaacagaatatat
                                                                                                                                                                                                      AGTCAAATGGCCATTTTATGTATGTGCATTTGGTATCATGGGCCGTGGAACAGAATATAT
Similarity 97; Conserv
 Conservative
                                                                                                      GERARD
W: METHOD
      1.3%;
                                                                                                      OF.
Score 51.4; D
Pred. No. 0.00
0; Mismatches
0;
                                                                                                       SCREENING
                                                                              , 073
      51.4;
No. 0.
                                                                                                       FOR
      DB
.002;
                                                                                                       PROTEIN
            6;
76;
            Length
 Indels
                                                                                                                                                                3891
0
Gaps
                                                                                                                                                                                                      3780
                                                                                                                                                                                                                               3720
                                                                                                                                                                                                                                                                                   3600
                                                                                                                                                                                                                                                                                                                                      3480
                                                                                                                                                                                                                                                                                                                                                  3480
                                                                                                                                                                                                                                                                                                                                                               3420
                                                                                                                                                                                                                                                                                                                                                                           3420
                                                                                                                                                                                                                                                                                                                                                                                          3360
                                                                                                                                                                                                                                                                                                                                                                                                     3360
                                                                                                                                                                                         3840
                                                                                                                                                                                                                                                         3660
                                                                                                                                                                                                                                                                     3660
                                                                                                                                                                                                                                                                                               3600
                                                                                                                                                                                                                                                                                                             3540
                                                                                                                                                                                                                                                                                                                        3540
                                                                                                                                                                                                                                                                                                                                                                                                                                            3240
 0;
```

```
; TOPOLOGY: line
; MOLECULE TYPE: C
; HYPOTHETICAL: NO
; ANTI-SENSE: NO
US-08-487-826B-13
  δÃ
                                             В
                                                                              Qy
                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 3
US-08-487-826B-13/c
                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                           Matches 144; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 13, Application US/08487826B Patent No. 5993827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (619) 235-0176
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
                                                                3469 aaactatttgcaactggttttcagaaaagagaaagaaacaacaacaaggaattgaaacagg 3528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
3529 cagggagatettaataeetaattteateatttetgeaaaatgtaetgttttagaatgtat 3588
                                                                                                                                                           3409 trtgtaaatagtttttagcttttaaaatttaaagtgtttttgagtgtgaaaagttgagta 3468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: ISTACLSON, Ned REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: NII
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 235-8550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1180 catgtgaagaaatgcacccccaatgcagtgttcaatgagctgtttgtctttga 1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08
FILING DATE: 10-SEP-1993
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Israelsen, Ned
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Su, Xin-znaun
APPLICANT: Wellems, Thomas E.
TITLE OF INVENTION: BINDING DOMAINS FROM PLASMODIUM VIVAX
TITLE OF INVENTION: AND PLASMODIUM FALCIPARUM ERYTHROCYTE BINDING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1120 gatccctatgtcaaagtgaacctgtaccatgccaaaaagagaatctccaagaagaagact 1179
                                        389 TTACTTTATGTTTTGTTTGCATAAAAGAATTAAGAAATTAAAAAGGAATAAAGTTAAA 330
                                                                                                                       728 aagactatcaaatgctccctcaacccggagtggaacgaaaccttcagatttca 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Knobbe Martens Olson & Bear STREET: 620 Newport Center Drive 16th Floor CITY: Newport Beach STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 19124 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctcatcgttgttgtaagagatgctaaaaatctggtacctatggaccccaacggcttgtca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sim, Kim L.
Chitnis, Chetan
Miller, Louis H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peterson, David S.
                                                                                                                                                                                                                                                                                                                                     cDNA
NO
                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                       1.3%; Score 49.2; DB 2; Length 19124; 50.7%; Pred. No. 0.018;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/487,826B
                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NIH121.001CP1
                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Version #1.25
                                                                                                                                                                                                        138; Indels
                                                                                                                                                                                                      2; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      667
```

Š В

1075 ttaaaagctcgacatctgcctaaatctgatgtgtccggactttcagatccctatgtcaaa 1134

---CCAGGACTTGCAGAGCCCTACGTGAAG 804

757 CTGGAGGCTCGAGGCCTGCGT----

1015 ggtgagttactgatctctctctgctatcagtccaccacaaacactctaactgtggttgtc 1074

Indels 12; Gaps

۲,

697 GGGGAGCTGTGCTTCTCTCCGGTACGTGCCCAGCTCAGGCCGGCTGACCGTGGTGGTG 756

DЬ

```
MEDIUM ALL.

COMBUTER: LBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ for Windows Version 2.0
SOFTWARE: FASTSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/872,979
FILING DATE: Herewith
CLASSIFICATION: S14
PRIOR APPLICATION UMBER: B11 FILING DATE:
APPLICATION NUMBER:
FILING DATE:
APPLICATION NUMBER:
FILING DATE:
APPLICATION NUMBER:
ATTORNEY/AGENT INFORMATION:
NAME: B111ngs, Lucy J.
REGISTRATION NUMBER: 967.0320 US
REFERENCE/DOCKET NUMBER: PF-0320 US
RELEPHONE: 415-845-0355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                              US-08-872-979-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-872-979-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 4, Application US/08872979; Patent No. 6074844
Query Match 1.2%;
Best Local Similarity 47.5%;
Matches 184; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Hillma
APPLICANT: Lal, p
APPLICANT: Corley
                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                              STRANDEDNESS: s
TOPOLOGY: linea
IMMEDIATE SOURCE:
LIBRARY: LUNGNO
CLONE: 1003941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESSE: Incyte Pharmaceuticals, Inc.
STREET: 3174 Porter Drive
                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3647 gtaaattaattgtttgtctgattagccaatctcaccacccaaat 3690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 31/7 _
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: COrley, Neil C.
TITLE OF INVENTION: TWO NEW HUMAN MEMBRANE FUSION PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              209 ATATATTTTTTTCGCTCGGATTATTCAAATTAATAACAAAAAT 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tacaatatc--aatgtgaatatcttgaatcctgttacaaatcctgcactgtattaaacat 3646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94304
                                                                                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                              1207 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hillman, Jennifer L.
                                                                                                                                                     LUNGNOT12
                                                                                                                                                                                                 S: single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Preeti
Score 47.4; DB 3; Length 1207; Pred. No. 0.014; 0; Mismatches 191; Indels 12
```

1:

```
RESULT 5
US-08-817-913-13/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
US-08-817-913-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1:
Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                       NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Okkels, rann
APPLICANT: Kreiberg, Jette
APPLICANT: Kreiberg, Jette
APPLICANT: Kreiberg, Jette
APPLICANT: Okkels, rann
APPLICANT: Kreiberg, Jette
PROMOTER SEQUENCE FROM POTATO
                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 1214 base pair
                                                                                                                                                                                                  TELEPHONE: 714-760-0404
                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/EP95/02196
FILING DATE: 06-JUN-1995
APPLICATION NUMBER: GB941286.7
FILING DATE: 21-OCT-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     805
                                                                                                                                                            TELEPHONE: /1+ TELEPHONE: /1+ 760-9502
                                       STRANDEDNESS:
TOPOLOGY: 11
                                                                                                                                                                                                                                      NAME: Altman, Daniel E REGISTRATION NUMBER: 34, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/08/817,913 FILING DATE: 15-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER:
                                                                             TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: FastSEQ Version 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tgtgactaccccaggagacaaattgcc 1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gatataagtgttgaatttttggttttggattctgaaagggggtccccgaaatgaggtaatc 1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acccccaatgcagtgttcaatgagctgtttgtctttgatattccttgtgagggccttgaa 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGCCCACGCAGCCAGGGAGGTGGAC 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGCAAGGTGCACCTGGGTGCCCGGGGCCTCGGGGCAGCCCCTGCAGCACTGGGCAGACATG 1044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gggcagttagtcttgggtgcagcagcagaaggaactggtggagagcactggaaagagatc 1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGTGGACCTGGTGCTGGCTGTCTGGGGACCGCAGCCTGCCGCTCCGAACTGAGCCCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGGCGGCCCCTACTTCAATGAGGCCTTCACCTTCCTGGTGCCCCTTCAGCCAGGTCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCCAGCTCATGCTGAACCAGAGGAAGTGGAAGAAGAGAAAAGACAGCCACCAAAAAAGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gtgaacctgtaccatgccaaaaagagaatctccaagaagaagactcatgtgaagaaatgc 1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13, Application 
0. 6184443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Newport Beach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         92660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CA
                                                                                              1214 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: Knobbe, Martens, Olson & Bear 620 Newport Center Drive 16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lund, Marianne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pedersen, Rolf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IBM Compatible
                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Diskette
                DNA (genomic)
                                                            double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/08817913
                                                                                                                                                                                                                                                          34,115
                                                                                                                                          13:
                                                                                                                                                                                                                                        DYOU10.001APC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     864
```

Query Match
Best Local Similarity

1.2%;

Score Pred.

47.4; DB No. 0.014;

4;

Length 1214;

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-817-913-14/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 14, Application US/08817913 Patent No. 6184443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2487
                                                                      REFERENCE/DOCKET NUMBER: DY TELECOMMUNICATION INFORMATION: 714-760-0404
                                                                                                                                           APPLICATION NUMBER: GB94
FILING DATE: 21-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: Altman, Daniel E
                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson & Bear
STREET: 620 Newport Center Drive 16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Lund, Marianne APPLICANT: Okkels, Finn APPLICANT: Kreiberg, Jett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                  APPLICATION NUMBER: PCT/
FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 620 Newport CITY: Newport Beach STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             77
                                                                                                                          NAME: Altman, Daniel E REGISTRATION NUMBER: 34
                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/817,913 FILING DATE: 15-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER:
                                                     TELEFAX:
                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 92660
                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aattagcttgagagtaatgtcactatatttgagttcttagagagaagtatgagtggaacttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gttctgaaattcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaag 2726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGATCAATGATAAGTTAAAAAGTAAATTTGCTTACATATTTTTAAAAGAAATGT 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        agtacagttgaattattaaatatgcaagttagaaattaagtctactgaaaaattt 2841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gctgtcaaattagcacaacaaagaatgtgtttcactatcttttctaggctaatttgtctt 2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caaaatcgttcaagagcaattctaatataatttacatatgttcacgcaaaatatgcttag 2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATTACTTTCAAATAGCTATATAAAATATGATAACTTTGAGATTTATGACAAAACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAATAAATAAAACTTACTAGTATTATAATAAAAGCATCACTCAATGATGAGTAAAAATA 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAATCATTATTTCTAAAAATATATTTTTTATTATTATTATACAATTCACCCCTAAAAGAAA 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gagetgttgtetatagageagtttaeagaettgtgtettgtateatttteeagtgeeagg 2666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCATTATTATACAAGCATAAATAATCTAATATCTTAACTTTTTTAATAATAAAA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCAAAATTTGAAATAATTACAAACATGATTAATGAAACTCATAGAAAATAAAACTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGGATCTTTAAATTTTTAAATATAGTATAATAATAATAATAATACAAAATTATAAAAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kreiberg, Jette
NVENTION: PROMOTER SEQUENCE FROM POTATO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                 714-760-9502
                                                                                                                                                                                                                                                                                                                                                                                                                                                          U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pedersen, Rolf
                                                                                                                                                                                                                                                                                                                                                                                   IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                      Diskette
                                                                                                                                                                                                 GB941286.7
                                                                                                                                                                                                                                     PCT/EP95/02196
                                                                                                                          34,115
                 14:
                                                                                                           DYOU10.001APC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78
```

```
; LENGTH: 1232 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: double
; TOPOLOGY: linear
; MOLECULE TYPE: DNA (genomic)
US-08-817-913-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 7
US-08-817-913-15/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 15, Application US/08817913 Patent No. 6184443 GENERAL INFORMATION:
STATE: CAPELL BEAUTI
STATE: CAPELL BEAUTI
STATE: CAPELL BEAUTI
COMPUTER READABLE FORM:
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: PASTSEO VEFTION I.5
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/817,913
FILING DATE: 15-SEP-1997
CLASSIFICATION DATA:
APPLICATION NUMBER: PCT/EP95/02196
FILING DATE: 06-JUN-1995
APPLICATION UMBER: GB941286.7
FILING DATE: 21-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 1.2%;
Best Local Similarity 46.5%;
Matches 193; Conservative
                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson & Bear
STREET: 620 Newport Center Drive 16th Floor
CITY: Newport Beach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Lund, Marianne
APPLICANT: Okkels, Finn
APPLICANT: Kreiberg, Jette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2547 gctgtcaaattagcacaacaaagaatgtgtttcactatcttttctaggctaatttgtctt 2606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2487 caaaatcgttcaagagcaattctaatatatatttacatatgttcacgcaaaatatgcttag 2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Kreiberg, Jette
TITLE OF INVENTION: PROMOTER SEQUENCE FROM POTATO
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            215 ATAATAAATAAAACTTACTAGTATTATAATAAAAGCATCACTCAATGATGAGTAAAAAATA 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 329 TTCATTATTATACAAGCATAAATAATCTAATATCTTAACTTTTTAATAATAAAA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      389 CATCAAAATTTGAAATTACAAACATGATTAATGAAACTCATAGAAAATAAAACTTCG 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         aattagcttgagagtaatgtcactatatttgagttcttagagaagtatgagtggaacttg 2786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gttctgaaattcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaag 2726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGATCAATGATAAGTTAAAAAGTAAATTTGCTTACATATTTTTAAAAGAAATGT 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agtacagttgaattattaaatatgcaagttagaaattaagtctactgaaaaaatt 2841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATTACTTTCAAATAGCTATATAAAATATGATAACTTTGAGATTTATGACAAAACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAATCATTATTTCTAAAAATATATTTTTTATTATTATTATATACAATTCACCCCTAAAAGAAA 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gagctgttgtctatagagcagtttacagacttgtgtcttgtatcattttccagtgccagg 2666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 47.4; DB 4; Length 1232; Pred. No. 0.015; 0; Mismatches 216; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 274
                                                                                                       RESULT 8
US-08-817-913-16/c
US-08-817-913-16/c
Sequence 16, Application US/08817913
Patent No. 6.184443
CENERAL INFORMATION:
APPLICANT: Pedersen, Rolf
APPLICANT: Okels, Finn
APPLICANT: Okels, Finn
APPLICANT: Kreiberg, Jette
TITLE OF INVENTION: PROMOTER SEQUENCE FROM POTATO
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson & Bear
STREET: 620 Newport Center Drive 16th Floor
CITY: Newport Beach
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
```

COUNTRY: U.S.A.
ZIP: 92660
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: LBM COmpatible
OPERATING SYSTEM: DOS

```
; STRANDEDNESS: double TOPOLOGY: linear , MOLECULE TYPE: DNA (genomic) US-08-817-913-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 1.2%;
Best Local Similarity 46.5%;
Matches 193; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1352 base pairs
LENGTH: nucleic acid
                                                                                                                                                                                                                                                                                                                                               2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Altman, Daniel E REGISTRATION NUMBER: 34,115 REFERENCE/DOCKET NUMBER: DYCTELECOMMUNICATION INFORMATION: TELEPHONE: 714-760-0404
                          2787 agtacagttgaattattaaatatgcaagttagaaatttaagtctactgaaaaattt 2841
                                                                                                                                                                                                                          2667 gttctgaaattcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaag 2726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Altman, Daniel E
                                                                                                                                                                                                                                                                                                                                                                                                                                      2547 gctgtcaaattagcacaacaaagaatgtgtttcactatcttttctaggctaatttgtctt 2606
                                                                                                                                                                                                                                                                                                                                                                                             449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: /14-/00-04
TELEFAX: 714-760-9502
                                                                                                                                                                                                                                                                                                                          caaaatcgttcaagagcaattctaatataatttacatatgttcacgcaaaatatgcttag 2546
AAGATCAATGATAAGTTAAAAAGTAAATTTGCTTACATATTTTTAAAAGAAATGT 161
                                                                                                                                      aattagcttgagagtaatgtcactatatttgagttcttagagaagtatgagtggaacttg 2786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATCAAAATTTGAAATAATTACAAACATGATTAATGAAACTCATAGAAAAATAAAACTTCG 450
                                                                                                AAATTACTTTCAAATAGCTATATAAAATATGATAACTTTTGAGATTTATGACAAAACCATG
                                                                                                                                                                                             ATAATAAATAAAACTTACTAGTATTATAATAAAAGCATCACTCAATGATGAGTAAAAATA 276
                                                                                                                                                                                                                                                                                             TTCATTATTATACAAGCATAAATAATCTAATATCTTAACTTTTTAATAATAAAAA----- 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 47.4; DB 4; Length 1352;
Pred. No. 0.015;
0; Mismatches 216; Indels 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DYOU10.001APC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

FastSEQ Version 1.5

```
RESULT 9
US-08-817-913-17/c
; Sequence 17, Application US/08817913
; Patent No. 6184443
                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                           Вр
                                                                                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TOPOLOGY: 1i; MOLECULE TYPE: US-08-817-913-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                        GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
APPLICANI: APPLICANI: Okkels, Finn
APPLICANI: Okkels, Finn
APPLICANI: Kreiberg, Jette
TITLE OF INVENTION: PROMOTER SEQUENCE FROM POTATO
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Altman, Daniel E REGISTRATION NUMBER: 34,115 REFERENCE/DOCKET NUMBER: DYO TELECOMMUNICATION INFORMATION: 714-760-0404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: GB941286.7 FILING DATE: 21-OCT-1994 ATTORNEY/AGENT INFORMATION: NAME: Altman, Daniel E
                                                                                   APPLICANT: Pedersen, Rolf APPLICANT: Lund, Marianne
                                                                                                                                                                                                                                                                             2787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                                                                                                                                               474
                                                                                                                                                                                                                                                                                                                                                                                  534
                                                                                                                                                                                                                                                                                                                                                                                                                                                    594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: PCT/EP95/02196 FILING DATE: 06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
wes 193; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 714-760-9502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gctgtcaaattagcacaacaaagaatgtgtttcactatcttttctaggctaatttgtctt 2606
                                                                                                                                                                                                                                         AAGATCAATGATAAAGTTAAAAAGTAAATTTGCTTACATATTTTTAAAAGAAATGT 360
                                                                                                                                                                                                                                                               agtacagttgaattattaaatatgcaagttagaaattaagtctactgaaaaaattt 2841
                                                                                                                                                                                                                                                                                                                                  aattagcttgagagtaatgtcactatatttgagttcttagagagaagtatgagtggaacttg 2786
                                                                                                                                                                                                                                                                                                                                                                              ATAATAAATAAAACTTACTAGTATTATAATAAAAGCATCACTCAATGATGAGTAAAAATA 475
                                                                                                                                                                                                                                                                                                                                                                                                  gttctgaaattcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaag 2726
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAATCATTATTTCTAAAAAATATTTTTTTATTATATATACAATTCACCCCCTAAAAGAAA 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCATTATTATACAAGCATAAATAATCTAATATCTTAACTTTTAATAAAAA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATCAAAATTTGAAATAATTACAAACATGATTAATGAAACTCATAGAAAAATAAAACTTCG 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caaaatcgttcaagagcaattctaatataatttacatatgttcacgcaaaatatgcttag 2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGGATCTTTAAATTTTTAAATATAGTATAATAATAATAATAATACAAAATTATAAAAATA 709
                                                                                                                                                                                                                                                                                                             AAATTACTTTCAAATAGCTATATAAAATATGATAACTTTGAGATTTATGACAAAACCATG
                                                                                                                      INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1734 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/817,913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 47.4; DB 4; Pred. No. 0.017;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DYOULO.001APC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1734;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                               415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ۲
```

```
g
                                                                                                           δÃ
                                                                                                                                                    밁
                                                                                                                                                                                      Q
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                  Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; MOLECULE TYPE: DNA (genomic) US-08-817-913-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 193; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: DY TELECOMMUNICATION INFORMATION: TELEPHONE: 714-760-0404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 21-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: Altman, Daniel E
REGISTRATION NUMBER: 34,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/EP95/02196
FILING DATE: 06-JUN-1995
APPLICATION NUMBER: GB941286.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: FastSEQ Vers
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                               2547 gctgtcaaattagcacaaagaatgtgtttcactatcttttctaggctaatttgtctt 2606
                                                                                                                                                                                                                                                                                                                                                                                                          2487 caaaatcgttcaagagcaattctaatatataatttacatatgttcacgcaaaatatgcttag 2546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
414 AAGATCAATGATAAGTTAAAAAGTAAATTTGCTTACATATTTTTAAAAGAAATGT 360
                                                                                                                                                                                                                                                                                                                                                                                    708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
TOPOLOGY: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FILING DATE: 15-SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Newport Beach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                             aattagcttgagagtaatgtcactatatttgagttctttagagaagtatgagtggaacttg 2786
                                                                                                                                                                        gttctgaaattcattcagaacctgttagattaaagctgcaccctgtgattatttgaaaag 2726
                               agtacagttgaattattaaatatgcaagttagaaattaagtctactgaaaaattt 2841
                                                                                                                                                                                                                                                               gagctgttgtctatagagcagtttacagacttgtgtcttgtatcattttccagtgccagg 2666
                                                                                                                                                    ATAATAAATAAAACTTACTAGTATTATAATAAAAGCATCACTCAATGATGAGTAAAAAATA 475
                                                                                                                                                                                                                                                                                                                                                                                    CATCAAAATTTGAAATAATTACAAACATGATTAATGAAAACTCATAGAAAATAAAACTTCG 649
                                                                           AAATTACTTTCAAATAGCTATATAAAATATGATAACTTTGAGATTTATGACAAAACCATG
                                                                                                                                                                                                                              TTCATTATTATACAAGCATAAATAATCTAATATCTTAACTTTTAATAATAAAA-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGGATCTTTAAATTTTTAAATATAGTATAATAATAATAATAATACAAAATTATAAAAATA 709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: Knobbe, Martens, Olson & Bear 620 Newport Center Drive 16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           714-760-9502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FastSEQ Version 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/817,913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34,115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DYOU10.001APC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 47.4; DB 4;
Pred. No. 0.018;
0; Mismatches 216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1920;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

۲,

US-08-617-860B-32

Sequence 32, Application US/08617860B Patent No. 6133506

```
Ф
                                                                                                                                                                                                         ; LOCATION:
US-08-617-860B-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: Patentin Release #1.0, Vers:
SOFTWARE: Patentin Release #1.0, Vers:
APPLICATION DATA:
APPLICATION UNBER: US/88/617,860B
FILING DATE: 01-MRR 1996
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/EP94/02950
FILING DATE: 05-SEP-1994
APPLICATION NUMBER: DE P4329951.2
FILING DATE: 04-SEP-1993
INFORMATION FOR SEQ ID NO: 32:
SEQUIENCE CHARACTERISTICS:
LENGTH: 1850 Base pairs
TYPE: Nucleic acid
                                                                                                               Query Match 1.2%;
Best Local Similarity 49.2%;
Matches 121; Conservative
2884 gagaatgtgtttgatatcacagtgtttgtaaattctatgaaaaatgcattttccaaacaa 2943
                                                                      2824 aagtotactgaaaaatttacattttgagtcaggttttgtgtcagtactttagcagttttt 2883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLONE: ClTEg1
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.50 inch, 1.4 Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Typfer, R., Bautor, J., Bothmann, H., Filsak, E., APPLICANT: Hyricke-Grandplerre, C., Klein, B., Martini, N., APPLICANT: M. 1ler, A., Schulte, W., Voetz, M., Walek, J., APPLICANT: Schell, J.
APPLICANT: Schell, J.
TITLE OF INVENTION: Promoters
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Cuphea lanceolata
IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                              LOCATION:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: DN
                                     NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                            NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: Nucleic acid
STRANDEDNESS: Double stranded
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
                                                                                                                                                                                                                                                                                                                                      OCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: Steinberg, Raskin & Davidson, P.C 1140 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAT-Signal
1428..1432
                                                                                                                                                                                                                           CDS
1797..1850
                                                                                                                                                                                                                                                                               Startcodon
1797..1799
                                                                                                                                                                                                                                                                                                                                                                                           Transcription start 1585
                                                                                                                                                                                                                                                                                                                                                                                                                                               TATA-Signal
1553..1556
                                                                                                                                                                                                                                                                                                                                      Leguminbox
1642..1657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Release #1.0, Version #1.25 (EPO)
                                                                                                         Score 46; DB 3; Length 1850;
Pred. No. 0.039;
0; Mismatches 125; Indels
                                                                                                               0;
                                                                                                             0;
```

```
Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Дδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
US-08-605-106-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4, Application US/08605106 Patent No. 5910631
                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/605,1
FILING DATE: 23-SEPT-1996
CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION DATA: PCT/EP94/02
FILING DATE: 01-MAR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                               TELEX:
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                               MOLECULE TYPE: : I
HYPOTHETICAL: NO
ANTI-SENSE: NO
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 01-MAR-1990
ATTORNEY/AGENT INFORMATION:
NAME: Woessner, Warren I
                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 30,440
REFERENCE/DOCKET NUMBER: 23
TELECOMMUNICATION: INFORMATION:
TELEPHONE: 612-373-6900
TELEFAX: 612-339-3061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3064 atattt 3069
|| |||
                                                                                  CLONE: ClTEg1 FEATURE:
                                                                                                                  ORGANISM: Cuphea lanceolata
IMMEDIATE SOURCE:
LIBRARY: genomic Lambda FIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: P.O. CITY: Minneapolis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3004 acaaagattaaaaatcaacctcttttttgtgctttaaaatgactttgggattaaaaaagc 3063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2944 cttatacatgctttttatgactatgcctaatgtaaagaaaatgtattacattctgtatgt 300:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Topfer, R. APPLICANT: Martini, N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                387 ATTTTT 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327 ATATTGTTGAATTTTTAAAATATTTTTTTGGTTTTAAAAATATATTTAAAAGTTTTTAAAT 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY:
                                                                                                                                                                                                                                                             TYPE: nucleic acid
NAME/KEY:
                                   LOCATION:
                                                                                                                                                                                                                                  STRANDEDNESS: do TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: USA
ZIP: 55402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T: Schell, J.
INVENTION: MEDIUM CHAIN-SPECIFIC THIOESTERS
F SEQUENCES: 14
                                                                                                                                                                                                                                                                                   4098 Base pairs
Startcodon
                                                                                                                  genomic Lambda FIX II
                               join(1797..2294, 2658..2791, 2898..3011, 3132 ...3303, 3391..3459, 3672..3941)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Schwegman,
O. Box 2938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Diskette
                                                                                                                                                                                                                                                 double stranded
                                                                                                                                                                                                                  DNS (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PCT/EP94/02935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/605,106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lundberg, Woessner & Kluth, P.A.
                                                                                                                                                                                                                                                                                                                                                                                                 235.001US1
```

LOCATION: FEATURE:

1797..1799

```
US-08-617-860B-32/c
US-08-617-860B-32/c
; Sequence 32, Application US/08617860B
; Patent No. 6133506
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-605-106-4
                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 49.7
Matches 121; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION:
FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION: FEATURE:
                                                                                                                                                                                                        3004
              APPLICANT:
                                                                                                                                                      3064 atattt 3069
                                                                                                                                                                                                                                              2944 cttatacatgctttttatgactatgcctaatgtaaagaaaatgtattacattctgtatgt 300:
                                                                                                                                                                                                                                                                                                   2884 gagaatgtgtttgatatcacagtgtttgtaaattctatgaaaaatgcattttccaaacaa 2943
                                                                                                                                                                                                                                                                                                                                                         2824 aagtetaetgaaaaatttaeattttgagteaggttttgtgteagtaetttageagttttt 2883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURE:
NAME/KEY:
   APPLICANT:
                                                                                                                                                                                                                                                                                                                                    147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURE:
                                                                                                                                                                                                                                 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EATURE:
                                                                                                                              387
                                                                                                                                                                                327
                                                                                                                                                                                                                                                                                  207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION:
                                                                                                                                                                                               acaaagattaaaaatcaacctcttttttgtgctttaaaaatgactttgggattaaaaaagc
                                                                                                                                                                                                                                ATTTTT 392
                                                                                                                                                                               ATATTGTTGAATTTTTAAAATATTTTTTGGTTTTAAAAATATATTTAAAAGTTTTTAAAT 386
Typfer, R., Bautor, J., Bothmann, H., Hvricke-Grandpierre, C., Klein, B., M M ller, A., Schulte, W., Voetz, M., W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intron VI
3460..3671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon VII
3672..3941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 intron V
3304..3390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              intron II
2295..2657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              exon VI
3391..3459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       exon V
3132..3303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      intron III
2792..2897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    exon II
1787..2294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Stopcodon 3942..3944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           exon III
2658..2791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3012..3131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon IV
2898..3011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       intron IV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ٧I
                                                                                                                                                                                                                                                                                                                                                                                               1.2%;
                                                                                                                                                                                                                                                                                                                                                                                    Score 46; DB 2; Le
Pred. No. 0.056;
0; Mismatches 125;
                                                                                                                                                                                                                                                                                                                                                                                                             Length 4098;
i., Filsak, E.,
, Martini, N.,
, Walek, J.,
                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                       3063
                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                        Qy
                         Qy
                                                  Ъ
                                                                                                    밁
                                                                                                                          Qy
                                                                            3404
                      3464 gagtaaaactatttgcaactggttttca 3491
                                                                                                     370
  250 TTTTTAAAAGAATTTAAAATATATTTAA 223
                                                   310
```

Ω Дb δÃ В Ωy 밁 γ В

B

251

```
; NAME/KEY:
; LOCATION: 
US-08-617-860B-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 05-SEP-1994
APPLICATION NUMBER: DE P43
FILING DATE: 04-SEP-1993
INFORMATION FOR SEQ ID NO: 32:
SEQUENCE CHARACTERISTICS:
LENGTH: 1850 Base pairs
                                                                                       Best Local Similarity
Matches 83; Conserv
                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                        NAME/KEY:
LOCATION:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                CLONE:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Schell, J.
TITLE OF INVENTION: PRO
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                  3344 attttttttttttaacatggaacaatgaaaccaacaacaacatttttaaaattaaaatg 3403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 01-MAR-PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                           LOCATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGINAL SOURCE:
ORGANISM: Cuphea lanceolata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
                                                                                                                                                                                                                      FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HYPOTHETICAL: I
                                                                                                                                                                                                                                                                                                                   FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                     MMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                               NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
TOPOLOGY: li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: Nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/01
FILING DATE: 01-MAR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: L
SOFTWARE: Patentin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                  LOCATION:
                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                           LOCATION:
                                                                                                                                                                                                                                                               NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                          LIBRARY:
gataatttgtaaatagttttttagctttttaaaatttaaagtgtttttgagtgtgaaaagtt 3463
                                  10036
                                                                                                                                                                                                                                                                                                                                                                                                         r: genomic Lambda FIX II
ClTEg1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1140 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Schell, J. Promoters
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                          Startcodon
1797..1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IBM Compatible SYSTEM: DOS
                                                                                                                                                                    CDS
1797..1850
                                                                                                                                                                                                                                                Leguminbox
1642..1657
                                                                                                                                                                                                                                                                                        Transcription
1585
                                                                                                                                                                                                                                                                                                                               TATA-Signal
1553..1556
                                                                                                                                                                                                                                                                                                                                                                    CAAT-Signal
1428..1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Steinberg, Raskin & Davidson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Diskette,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Double stranded
                                                                                                   1.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DE P4329951.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCT/EP94/02950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/617,860B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3.50 inch,
                                                                                                                                                                                                                                                                                                     start
                                                                                                   Score 44;
Pred. No.
                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.4
                                                                                                     0.12;
                                                                                                                 DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #1.25 (EPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           storage
                                                                                                                 Length 1850
                                                                                       Indels
                                                                                       0;
                                                                                       Gaps
```

```
US-08-605-106-4/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 4098 Base pairs
TYPE: nucleic acid
STRANDEDNESS: double stranded
TOPOLOGY: Linear
MOLECULE TYPE: DNS (genomic)
HYPOTHETICAL: NO
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 4, Application US/08605106
PATENT NO. 5910631
GENERAL INFORMATION:
APPLICANT: Topfer, R.
APPLICANT: MATTINI N.
APPLICANT: Schell, J.
TITLE OF INVESTION: MEDIUM CHAIN-SPECIFIC THIOESTERS
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER TRADABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBK Compatible
COMPUTER: IBK Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEO Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/605,106
FILING DATE: 23-SEPT-1996
CLASSIETCATION UMBER: PCT/EP94/02935
APPLICATION DATA:
APPLICATION UMBER: 30,440
REGISTRATION NUMBER: 33,440
REGISTRATION UMBER: 235.001US1
TELEPONE: 612-339-3061
TELEPONE: 612-339-3061
                                                                                                                                                                                                                                         LIBRARY: genomic Lambda FIX II
CLONE: C1TE91
FEATURE:
NAME/KEY: CDS
LOCATION: join(1797.2294, 2658.
LOCATION: ..3303, 3391..3459, 367
FEATURE:
NAME/KEY: Startcodon
LOCATION: 1797..1799
FEATURE:
NAME/KEY: Startcodon
  FEATURE:
NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                    IMMEDIATE SOURCE:
LIBRARY: genom'
CLOWP
                                                                                                       LOCATION: EATURE:
                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                          PEATURE:
                                                            LOCATION:
                                                                                                                                                NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Schwegn
STREET: P.O. Box (
CITY: Minneapolis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 55402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Schwegman, Lundberg, Woessner & Kluth, P.A.
P.O. Box 2938
                                                            exon III
2658..2791
intron III
2792..2897
                                                                                                                        intron II
2295..2657
                                                                                                                                                                                    exon II
1787..2294
                                                                                                                                                                                                                                                                                                               join(1797..2294, 2658..2791, 2898..3011, 3132
..3303, 3391..3459, 3672..3941)
```

```
QΥ
                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
US-08-232-463-14/c
                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-605-106-4
COUNTRY: USA
COUNTRY: USA
ZIP: 2313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATEN
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463
FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: US/07/935,313
APPLICATION NUMBER: US/07/935,313
APPLICATION NUMBER: EP 91 114 300.6
                                                                                                                                                                                                                                                                                                                                              Sequence 14, Application US/08232463 Patent No. 5670367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 1.18;
Best Local Similarity 56.18;
Matches 83; Conservative
                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY:
LOCATION:
FEATURE:
NAME/KEY:
                                                                                                                                                                                                                                                             3464 gagtaaaactatttgcaactggttttca 3491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3344 attttttttttttaacatggaacaatgaaaccaacaacaacatttttaaaattaaaatg 3403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY:
LOCATION:
FEATURE:
                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: Foley & L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        250 TTTTTAAAAGAATTTAAAATATATTTAA 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY:
                                                                                                                                                                                                   STREET: 1800 Diag
CITY: Alexandria
STATE: VA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY
                                                                                                                                                                                                                            E: Foley & Lardner
1800 Diagonal Road, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             exon VII
3672..3941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Stopcodon 3942..3944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon VI
3391..3459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               intron V
3304..3390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     exon V
3132..3303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     intron VI
3460..3671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           intron IV
3012..3131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                exon IV
2898..3011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 44; DB 2; Length 4098; Pred. No. 0.18; O; Mismatches 65; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; CLONE: p
US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-583-672-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 1.1%; Score 44; DB 1; Length 7218; Best Local Similarity 3.3%; Pred. No. 0.23; Matches 11; Conservative 190; Mismatches 135; Indels
                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1, Application US/08583672 Patent No. 5741673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEX: 899149 INFORMATION FOR SEQ ID NO: 14: SEQUENCE CHARACTERISTICS: LENGTH: 7218 base pairs TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/583,672
                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Pretty, Schroeder, Brueggemann & Clark
STREET: 444 South Flower Street, Suite 2000
                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: A NOVEL HOMEOBOX FACTOR THAT STIMULATES TITLE OF INVENTION: INSULIN EXPRESSION IN PANCREATIC ISLET
                                                                                                                                                                                                                                                                                                                          APPLICANT: Montminy, Marc R. APPLICANT: Leonard, James N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3501 aaagaaacaacaaaggaattgaaacaggcagggaga 3536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3441 agtgtttttgagtgtgaaaagttgagtaaaactatttgcaactggttttcagaaaagaga 3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3381 caaacatttttaaaattaaaatggataatttgtaaatagtttttagcttttaaaatttaa 3440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3261 taaggggccaaatctaagtattcttcacggcagccagaagttaatggtggtagcagctga 3320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3201 tatgtgcatttggtatcatgggccgtggaacagaatatatgttggacctctgaaaagttg 3260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)836-9300
TELEFAX: (703)683-4109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 26-AUG-1991 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                        STREET: 444 South
CITY: Los Angeles
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS: single TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: BENT, Stephen A. REGISTRATION NUMBER: 29, REFERENCE/DOCKET NUMBER:
                                                                                                                                                      COUNTRY:
                                                                                                                                    ZIP: 90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pTZgpt-F1s
                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29,768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30472/114 IMMU
                                                                                                                                                                                                                                                                                          CELLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
```

```
밁
                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
Job time: 5455 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-583-672-1
                                            Search completed: December 12, 2001, 12:24:59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 1.18;
Best Local Similarity 80.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 619-546-9392 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: P41 9422 TELECOMMUNICATION INFORMATION: TELEPHONE: 619-546-4737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 1614 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE:
                                                                                                                                                                                                                                                                                               165 caccagccgggaagaatt 182
                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: CDS
LOCATION: 331..1182
OTHER INFORMATION: /product= "ITF-1 Home
OTHER INFORMATION: transcription factor"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: of TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Reiter, Stephen REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                              19 CACCAGCCGCGTGGAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acid
EDNESS: both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product= "ITF-1 Homeobox-type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        us/08/106,936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       31, 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 43.6; DB 1; Pred. No. 0.15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1614;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
```

1;

```
Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
Perfect score:
                                                                                                                                                                                                                                                                              Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM protein - protein search, using sw model
                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     on ::
          5
7
8
10
11
                                                                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
        2201
2201
1162
1159
1154
603.5
464.5
464.5
464.5
                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq
                                                                                                                                                                                                                                                                                                                                                                                                                                     A_Geneseq_1101:*

1: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:*
3: /SIDS8/gcgdata/geneseq/geneseqp/AA1982.DAT:*
4: /SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
6: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7: /SIDS8/gcgdata/geneseq/geneseqp/AA1986.DAT:*
8: /SIDS8/gcgdata/geneseq/geneseqp/AA1989.DAT:*
9: /SIDS8/gcgdata/geneseq/geneseqp/AA1989.DAT:*
10: /SIDS8/gcgdata/geneseq/geneseqp/AA1990.DAT:*
11: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
12: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
13: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
14: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
15: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
16: /SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
17: /SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:*
18: /SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
18: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
20: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
22: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
23: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
24: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
25: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
26: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
27: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
28: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
29: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
20: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length: 0
length: 2000000000
                                                                                                                                                                                                                                                        Match
      100.0

100.0

52.8

52.7

52.4

27.4

21.1

21.1

19.4

18.5
                                                                                                                                                                                                                                                                              Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       December 12, 2001, 10:53:49; Search time 24.92 Seconds (without alignments) 1263.288 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  522463 seqs, 74073290 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-680-121-2
2201
1 MAPITTSREEFDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MAPITTSREEFDEIPTVVGI.....KEICDYPRRQIAKWHVLCDG
                                                                                                                                                                                                                                                          Length
                                                                   425
431
431
431
486
474
                                                                                                                                                                                                                                                             DB
        19
22
22
27
17
21
21
22
22
23
23
21
21
21
22
23
                                                                                                                                                                                                                                                             IJ
    AAB92921
AAM41363
AAR97722
AAB41973
AAM40253
AAM42039
AAW25032
AAR57421
                                                                                                                                                                     AAW74584
AAW75782
AAM39577
                                                                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           522463
Repro-PC-1.0 prost Hormone regulated Human polypeptide Human polypeptide Human polypeptide Mouse inositol pol Human ORFX ORFI.737 Human polypeptide Human polypeptide Human Doc2-beta co Rabphilin-3A. Hom
                                                                                                                                                                                                                                                        Description
```

Human protein sequ	AAB94266	22	1104	7.3	161	45
	AAR66726	16	672	7.3	161	44
Type III (alpha-ty	AAR94765	17	672	7.4	163	43
cDNA encoding prot	AAY93259	21	672	7.5	164	42
Repro-PC-1.0 immun	AAW30693	19	31	7.5	166	41
Human polypeptide	AAM40102	22	313	7.7	169	40
Repro-PC-1.0 immun	AAW30698	19	33	7.7	169	39
Rat mutated protei	AAB19565	21	280	7.8	171.5	38
Active type R-Ras	AAW24227	18	834	7.9	173.5	37
Human polypeptide	AAM41888	22	319	8.0	176	36
Human vesicle traf	AAE04760	22	313		177	35
Protein kinase C-I	AAP82018	9	697	8.1	177.5	34
Rat protein kinase	AAB19564	21	696		177.5	33
Repro-PC-1.0 immun	AAW30694	19	34		180	32
Human protein sequ	AAB92692	22	358	٠	181.5	
secreted	AAW63683	19	293		181.5	30
Human vesicle traf	AAE04764	22	490	9.2	202	29
Human secreted pro	AAG02306	21	228	9.7	213.5	
Human protein sequ	AAB94880	22	550		215	27
Human pancreatic c	AAB54122	21	101		225	26
Repro-PC-1.0 immun	AAW30697	19	46	10.3	226	25
Human vesicle traf	AAE04779	22	336		235.5	24
Rat synaptotagmin	AAE05976	22	123	11.5	253	23
Rat synaptotagmin	AAE05973	22	132		267	22
Human neuronal apo	AAE02056	22	426	13.5	298	21
Repro-PC-1.0 immun	AAW30696	19	60	٠	310	20
	AAB56870	21	219	14.5	•	19
	AAW87702	20	375	15.4	338.5	18
	AAB90777	22	105	•	348.5	17
pro	AAB95777	22	456		370	16
_	AAY12318	20	72	16.9	w	15
Human Doc2-alpha.	AAW83429	20	400	17.5	84.	14
-specific p	AAW01114	17	400	17.5	384.5	13
Mouse Doc2alpha pr	AAY27275	20	405	17.9	393.5	12

ALIGNMENTS

AAW74584 ID AAW7

AAW74584 standard; Protein; 425

AΑ

AAW74584;

11-JAN-1999

(first entry)

Repro-PC-1.0 prostate cancer-specific marker

RESULT

سو

```
New isolated Repro-PC-1.0 polynucleotide(s) - are used to develop products for the detection and prophylactic and therapeutic treatment of prostate cancer \,
                                     WPI; 1998-506363/43.
N-PSDB; AAV54208.
                                                                                                     15-MAY-1997;
07-MAR-1997;
                                                                                                                                                                                                          Repro-PC-1.0; prostate cancer; marker; synaptotagmin; human; diagnosis; vaccine; therapy.
                                                                French CK,
                                                                                                                                 06-MAR-1998;
                                                                                                                                                    11-SEP-1998
                                                                                                                                                                      WO9839447-A1.
                                                                                                                                                                                        Homo sapiens.
                                                                                   (REPR-) REPROGEN INC.
                                                                Schneider
                                                                                                     97US-0047811
97US-0041246
                                                                                                                                 98WO-USD4488
                                                               PΑ,
                                                                 Yamamoto KK;
```

```
RESULT
AAW75782
ID AAW7
XX
AC AAW7
XC AAW7
XX
DT 21-C
XX
HOIM
KW Repi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            νQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                             γ
                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Repro-PC-1.0 is a novel prostate cancer-specific marker, which crepresents a novel human brain synaptotagmin isoform that may function in exocytosis and endocytosis pathways. Its amino acid sequence was deduced from cDNA clones (see AAV54208) isolated from concerce conserved in a clones in MHC-restricted concer response against cells expressing Repro-PC-1.0 Also claimed are Repro-PC-1.0 polypeptide analogues that act as decoys, concer (by detecting Repro-PC-1.0, and methods for detecting concer (by detecting Repro-PC-1.0 mRNA or polypeptide in a sample), concer (by detecting prostate cancer cells (e.g. using the antibodies of the invention), for following the progress of prostate cancer, for concerted the concerted concerted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 68-69; 87pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
Repro-Pc-1.0; prostate cancer; LNCaP; hormone-regulated
                                                                                                                                                                                     AAW75782 standard; Protein; 425
                                             Hormone-regulated Repro-PC-1.0 polypeptide.
                                                                                             21-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       V1cdg 425
                                                                                                                                                                                                                                                                                                                                                  VLCDG 425
                                                                                                                                                                                                                                                                                                                                                                                          TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tilsfdrfsrddiigevliplsgielsegkmlmnreiikrnvrkssgrgellislcyqst 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            atpklflegekesvspeslksstsltseekgeklgtlffsleynferkafvvnikeargl 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          {\tt diypenlnskkk} f {\tt gaddknevknkpavpknslhldlekrdlngnfpktnlkpgspsdlen}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            425 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 2201; DB 19; Length 425; 100.0%; Pred. No. 2.8e-196;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
QΥ
                                                                    δÃ
                                                                                                  Вþ
                                                                                                                            δÃ
                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                         This polypeptide is encoded by a newly isolated hormone-regulated gene, termed Repro-PC-1.0 (see ANV57327), isolated from prostate cancer cells. The polypeptide (calculated mol.wt.48,070, pI 8.83) contains 2 copies of a 116-amino acid repeat that show homology to the C2 regulatory domain of calcium-dependent isoforms of protein kinase C, and to isoforms of synaptotagmin. Repro-PC1.0 c expression is specifically and differentially up-regulated in INCaP tumour cells. The invention provides methods of identifying hormone-regulated traits in a cell. The methods involve cultivating the cell as a graft in 2 different hormonal environments and determining whether expression of the trait differs in the 2 grafts. The methods can be used to identify hormonally-regulated traits and hormonally-regulated genes for use as targets for therapeutic intervention in disease states,
                                                                                                                                                                                                                Best Local Similarity 100 Matches 425; Conservative
                                                                                                                                                                                                                             Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identification of hormone-regulated traits, e.g. in cancers exposing grafts of biological material to different hormonal environments in animals of different reproductive states
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human; synaptotagmin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1998-506379/43.
N-PSDB; AAV57327.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9839661-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 1; Page 59-60; 85pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (REPR-) REPROGEN INC
                                                                                                                                                                                                                                                                                                                 particularly cancers.
                181
                                            121
                                                                        121
                                                                                                    61
                                                                                                                                61
                                                                                                                                                        DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN 120
                                                       ATPKLFLEGEKESVSPESLKSSTSLTSBEKQEKLGTLFFSLEYNFERKAFVVNIKEARGL 180
PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHF 240
                                       atpklflegekesvspeslksstsltseekqeklgtlffsleynferkafvvnikeargl 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yamamoto KK;
                                                                                                                                                                                                                                                                                        425 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-0047811.
97US-0041246.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98WO-US04519.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "r
276..396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note=
15..37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "putative transmembrane domain"
                                                                                                                                                                                                                                100.0%; Score 2201; DB 19; 100.0%; Pred. No. 2.8e-196;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "repeat region"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "repeat region"
                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                               Length 425;
                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                       Gaps
```

181

pamdeqsmtsdpyikmtilpekkhkvktrvlrktldpafdetftfygipytqiqelalhf 240

0;

```
RESULT
AAM39577
   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                    21-JAN-2000;
25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
                                                                                                                                                                                                Tang
Wang
                                                                                                                                                                                                                                                      14-SEP-2000;
19-OCT-2000;
29-NOV-2000;
The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polypucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAM39577 standard; Protein; 431 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            peripheral nervous system; neuropathy; central nervous system; Calzheimer's; Parkinson's disease; Huntington's disease; haemosta amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic;
                                                                                                                                                                                                                                                                                                                                                                                                 WO200153312-A1
                                                                                                  Example
                                                                                                                                                                                        Zhao
                                                                                                                                                                                                                                                                                                                                                       26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                            26-JUL-2001
                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                     chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; nootropic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-OCT-2001
                                                                                                                                                                                                                                 (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                           eukaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Vlcdg
                                                                                                                                                                                     γT,
QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLCDG
                                                                                                                                                       2001-442253/47.
DB; AAI58733.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tilsfdrfsrddiigevliplsgielsegkmlmnreiikrnvrkssgrgellislcygst
                                                                                                                      nucleic acids and as central nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polypeptide
                                                                                                  4; SEQ
                                                                                                                                                                                       Liu C
Wang Z
Zhou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              425
                                                                                                                                                                                                                                                     2000US-0552317
2000US-0598042
2000US-0620312
2000US-0653450
2000US-0652191
2000US-0693036
2000US-0727344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                 2000US-0488725
                                                                                                                                                                                                 2,0
                                                                                                  IJ
                                                                                                                                                                                       Ď,
                                                                                                                                                                                              Asundi V, (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunosuppressant; cytostatic;
s system; neuropathy; central ne
                                                                                                                                                                                       Wehrman T,
Goodrich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQ
                                                                                                NO 2722; 10078pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IJ
                                                                                                                     polypeptides, useful system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2722.
                                                                                                                                                                                       R
                                                                                                                                                                                                Chen R,
Xu C,
                                                                                                                                                                                       Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pathy; central nervous system; CNS;
Huntington's disease; haemostatic;
                                                                                                                                                                                                Ma
Xue
                                                                                                                                                                                   ı Y,
э АЛ,
RT;
                                                                                                                                 for
                                                                                                                                                                                                           Qian
                                                                                                                                                                                                Yang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene therapy;
                                                                                                                               treating
                                                                                                                                                                                                yβ,
                                                                                                                                                                                                 zhang
                                                                                                                                                                                                           Ren
                                                                                                                                 disorders
                                                                                                                                                                                                            т
                                                                                                                                                                                                 'n
                                                                                                                                                                                                           Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                           Ď
```

29-JUL-1999; 27-AUG-1999; 11-JAN-2000; 02-MAY-2000;

99JP-0248036. 99JP-0300253. 2000JP-0118776. 2000JP-0183767.

07-FEB-2001 EP1074617-A2

28-JUL-2000;

2000EP-0116126

Human; primer;

detection; diagnosis; antisense therapy;

gene therapy

Human

protein

sequence SEQ ID

NO:11567.

```
RESULT
AAB2921
ID AAB
XX AAB
AC AAB
XX 26-
XX Hum
XX Hum
XX Hum
XX Hum
XX EP1
XX EP1
XX 29-
PR 29-
PR 29-
PR 11-
PR 11-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                   20
                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and c.n.S disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                         AAB92921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   specification.
                                                                                                                                                                                             26-JUN-2001
                                                                                                                                                                                                                   AAB92921;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                lateral sclerosis,
                                                                                                                                                                                                                                                                                                 414
                                                                                                                                                                                                                                                                                                                        408
                                                                                                                                                                                                                                                                                                                                              354
                                                                                                                                                                                                                                                                                                                                                                   349
                                                                                                                                                                                                                                                                                                                                                                                          294
                                                                                                                                                                                                                                                                                                                                                                                                                290
                                                                                                                                                                                                                                                                                                                                                                                                                                      234
                                                                                                                                                                                                                                                                                                                                                                                                                                                             230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _
                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MAPITTSREEFDEIPTVVGIFSAFGLVFTVS--LFAWICCQRKSSKSNKTPPYKFVHVLK
                                                                                                                                                                                                                                                                                                vcesprkpvakwhslse
                                                                                                                                                                                                                                                                                                                        ICDYPRRQIAKWHVLCD 424
                                                                                                                                                                                                                                                                                                                                                       TPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGA-AAEGTGGEHWKE
                                                                                                                                                                                                                                                                                                                                                                                         elqvslsyqpvaqrmtvvvlkarhlpkmditglsgnpyvkvnvyygrkriakkkthvkkc
                                                                                                                                                                                                                                                                                                                                                                                                     ELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLS-DPYVKVNLYHAKKRISKKKTHVKKC
                                                                                                                                                                                                                                                                                                                                                                                                                                    ysqlqdlvlhflvlsfdrfsrddvigevmvplagvdpstgkvqltrdiikrniqkcisrg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sgscidqlpikmdygeelrspitsltpgesk-ttspsspeedvmlgsltfsvdynfpkka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPSDLENATPKL----FLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GVDIYPENLNSKKKF-----GADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       maeitnirpsfdvspvvagligasvlvvcvsvtvfvwscchqqaekkhknppykfihmlk
                                                                                                                                                                                                                                                                                                                                            tlnpifnesflydiptdllpdisieflvidfdrttknevvgrlilgahsvtasgaehwre
                                                                                                                                                                                                                                                                                                                                                                                                                                                            YTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRG
                                                                                                                                                                                                                                         standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and Shy-Drager Syndrome. Other uses include the
                                                                                                                                                                                                                                         Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 77;
                                                                                                                                                                                                                                         431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1162; DB 22
Pred. No. 1.4e-99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 431;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113
                                                                                                                                                                                                                                                                                                                                                                   407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             58
                                                                                                                                                                                                                                                                                                                                                                                                                348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 233
                                                                                                                                                                                                                                                                                                                                                                                          353
                                                                                                                                                                                                                                                                                                                                                                                                                                     293
                                                                                                                                                                                                                                                                                                                                                                                                                                                             289
```

7;

```
CC comprises: (a) an oligonucleotide which comprises one of conjuncted the complementary to the sequences defined in the specification. Where a primer set of the complementary strand of a polynucleotide which comprises one of cc the 5602 nucleotide sequences defined in the specification, where the cc oligonucleotide comprises at least 15 nucleotides; or (b) a combination cc of an oligonucleotide comprises at 15 nucleotides; or (b) a combination cc complementary strand of a polynucleotide which comprises a 5'-end cc complementary strand of a polynucleotide which comprises a 5'-end cc complementary to a polynucleotide comprises a 5'-end cc polynucleotide comprises a 1'-end sequence, where the oligonucleotide comprises a 1'-end sequence, where the combination of the 5'-end sequence/3'-end sequence is selected from those defined in cc the specification. The primer sets can be usef in antisense therapy and cc particularly full-length cDNAs. The primers are useful for synthesising polynucleotides, comparison and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specialised methods. AAH03166 to AAH13628 and Cc AAH33633 to AAH13742 represent human cDNA sequences; AAB92446 to AAH3629 are present invention.

CC of the present invention.
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                             Дb
                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ota T,
Ishii
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 8; SEQ ID 11567; 2537pp + CD ROM; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2001-318749/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-JUN-2000; 2000JP-0241899
  354
                                                                             294
                                                                                                                                                        234
                                                                                                                                                                                                                                     174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local 229;
                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MAPITTSREEFDEIPTVVGIFSAFGLVFTVS--LFAWICCQRKSSKSNKTPPYKFVHVLK 58
                                                                                                                                                 tlnpifnesflydiptdllpdisieflvidfdrttknevvgrlilgahsvtasgaehwre 413
                                    TPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGA-AAEGTGGEHWKE 407
                                                                        elqvslsyqpvaqrmtvvvlkarhlpkmditglsgnpyvkvnvyygrkriakkkthvkkc
                                                                                               ELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLS-DPYVKVNLYHAKKRISKKKTHVKKC
                                                                                                                                                                                                                                                                                                             sgscidqlpikmdygeelrspitsltpgesk-ttspsspeedvmlgsltfsvdynfpkka
                                                                                                                                                                                                                                                                                                                                    SPSDLENATPKL----FLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKA 169
                                                                                                                                                                                                                                                                                                                                                                                        gisiypetlsnkkkiikvrrdkdgpgreggrrnllvdaaeagllsrd-----kdprgps 114
                                                                                                                                                                                                                                                                                                                                                                                                                               GVDIYPENLNSKKKF-----GADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPG 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   maeitnirpsfdvspvvagligasvlvvcvsvtvfvwscchqqaekkhksppykfihmlk 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Isogai T, Nishikawa T,
Sugiyama T, Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1159; DB 22; Length 431;
Pred. No. 2.6e-99;
7; Mismatches 111; Indels 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hayashi K,
A, Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saito K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Yamamoto T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                             173
                                                                                                               348
                                                                                                                                                                                                                                   233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7;
```

δÃ 밁 80 밁 Qy

8

Sequence

486

QΥ

```
RESULTY
AAMA1156
AID AAMA
XX
AC AAMA
ACC AAMA
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                 immunosuppressant and cytostatic activity. The polypucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral nervous system containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous system diseases, such as alzheimer's, parkinson's disease, Huntington's disease, such as alzheimer's, parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.

Note: The sequence data for this patent did not form part of the printed specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tang
Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-JAN-2000;
25-APR-2000;
09-JUL-2000;
19-JUL-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zhao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer; s; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             such as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 2; SEQ ID NO 6294; 10078pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel nucleic acids and polypeptides, usuch as central nervous system injuries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-DEC-2000; 2000WO-US34263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-JUL-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human polypeptide SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAM41363 standard; Protein; 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   408 ICDYPRRQIAKWHVLCD
:|: ||: :||| | :
414 vcesprkpvakwhslse
                                                                                                                                                                                                                                                                                                                                                                                                                                                        invention relates to human nucleic acids (AAI57798-AAI61369) and encoded polypeptides (AAM38642-AAM42213) with nootropic,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-442253/47.
DB; AAI60519.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Liu C,
Wang z,
Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000US-0488725
2000US-0552317
2000US-05598042
2000US-0620312
2000US-0653450
2000US-0662191
2000US-0693036
2000US-0727344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Asundi V,
Wehrman T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chen R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6294.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nen R, Ma Y,
Ku C, Xue AJ,
Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ren F,
Zhang J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wang D;
```

an

```
RESULT
AAR97722
                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δδ
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
         N-PSDB;
                                                                                                        09-APR-1996.
                                                                                                                             JP08092290-A.
                                                                                                                                                                    Peptide
                                                                                                                                                                                                    Mus
                                                                                                                                                                                                                                 Synaptogamin; antagonist; inhibitor; neurotransmitter; hormone; calcium release; inositol; polyphosphate; pentakisphosphate; hexakisphosphate; tetrakisphosphate; binding protein; IP4-BP;
                                                                                                                                                                                                                                                                            Mouse
                                                                                                                                                                                                                                                                                                 29-APR-1997
                                                                                                                                                                                                                                                                                                                      AAR97722
                                                                                                                                                                                                                                                                                                                                        AAR97722 standard; Protein;
                                                             20-SEP-1994;
                                                                                  20-SEP-1994;
                                          (SOSE-) SOSEI
                                                                                                                                                                                                                                                                                                                                                                                               469
                                                                                                                                                                                                                                                                                                                                                                                                                  408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    116
                                                                                                                                                                                                                                                                                                                                                                                                                                       409
                                                                                                                                                                                                                                                                                                                                                                                                                                                           349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Simhes 228;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <del>---</del>
                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                    musculus.
         1996-236100/24.
DB; AAT29743.
                                                                                                                                                                                                                                                                                                                                                                                             vcesprkpvakwhslse
                                                                                                                                                                                                                                                                                                                                                                                                                                     TPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGA-AAEGTGGEHWKE | | :||| |::||| : :| |||:|| ||:|| tlnpifnesflydiptdllpdisieflvidfdrttknevvgrlilgahsvtasgaehwre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPSDLENATPKL----FLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKA 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELLISLCYQSTINTLTVVVLKARHLPKSDYSGLS-DPYVKVNLYHAKKRISKKKTHVKKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sgscidqlpikmdygeelrspitsltpgesk-ttspsspeedvmlgsltfsvdynfpkka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gisiypetlsnkkkiikvrrdkdgpgreggrrnllvdaaeagllsrd-----kdprgps 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GVDIYPENLNSKKKF-----GADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPG 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            maeitnirpsfdvspvvagligasvlvvcvsvtvfvwscchqqaekkhknppykfihmlk 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MAPITTSREEFDEIPTVVGIFSAFGLVFTVS--LFAWICCQRKSSKSNKTPPYKFVHVLK 58
                                                                                                                                                                                                                                                                                                                                                                                                        ICDYPRRQIAKWHVLCD 424:1: ||: :||| | :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIP 229
                                                                                                                                                                                                                                                                            inositol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                        polymerase
                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                          <u>ξ</u>
                                                                                                                                                                                                                                                                          polyphosphate binding
                                                             94JP-0252942
                                                                                  94JP-0252942
                                                                                                                                                        Location/Qualifiers 315.346 /label= synaptogami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52.4%;
                                                                                                                                                  "part
                                                                                                                                                                                                                        chain reaction; murine
                                                                                                                                                          synaptogamin_II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Score 1154; DB 22;
; Pred. No. 9.1e-99;
77; Mismatches 112;
                                                                                                                                                                                                                                                                                                                                           422 AA
                                                                                                                                                  of C2A domain"
                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                            IP4-BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                       468
                                                                                                                                                                                                                                                                                                                                                                                                                                                           407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7;
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ър
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                AAB41973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Degenerate primers (see AAT29741 and AAT29742) were designed based or peptide fragments from the inositol polyphosphate binding protein IPABP isolated from ddy mouse cerebellum. The primers were used for CCR amplification of the mouse IPABP gene (see AAT29743). The C2A domain at the C-terminal end of IPABP contains the synaptogamin II peptide. A consensus sequence was obtained from a comparison of synaptogamin peptides from a variety of species. Peptides comprising the consensus motif (see AAR97721) are able to bind to inositol tetrakisphosphate, inositol pentakisphosphate and inositol hexakisphosphate, such peptides can inhibit neurotransmitter release and hormone release and are calcium inhibitors.
             Human; open reading frame; ORFX; detection; vulnerary; antipsoriatic; antiparkinsonian; anticonvulsant; osteopathic; antiarthritic; immunostimulant; thrombolytic; coagulant; va
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Inositol poly:phosphate (IPP)-binding peptide - useful as inhibitor of calcium, neuro:transmitter release or hormone and for identifying IPP antagonists
                                                                                                                                                                                                 AAB41973 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                Human ORFX ORF1737 polypeptide sequence SEQ ID NO:3474.
                                                                                                                                  08-FEB-2001
                                                                                                                                                                  AAB41973;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 8;
                                                                                                                                                                                                                                                                                405
                                                                                                                                                                                                                                                                                                               419
                                                                                                                                                                                                                                                                                                                                               345
                                                                                                                                                                                                                                                                                                                                                                              359
                                                                                                                                                                                                                                                                                                                                                                                                              285
                                                                                                                                                                                                                                                                                                                                                                                                                                            299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10
                                                                                                                                                                                                                               7
                                                                                                                                                                                                                                                                                                                                                                VFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAK
                                                                                                                                                                                                                                                                                                                                                                                                            |||||:||||:||||:|::::|
ydfdrfskhdiigevkvpmntvdlgqpieewrdlqgge--keepek---lgdictslryv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LSFDRFSRDDIIGEVLIPLSGIEL----SEGKMLMNREIIKRNVRKSSGRGELLISLCYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTI 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----egege-----ekepenlgklqfsldydfqanqltvgvlqaaelpa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPA 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       einkiplppwaliamavvaglllltccfcickkccckkkknkkekg-----kgm--
                                                                                                                                                                                                                                                                                whsl 408
                                                                                                                                                                                                                                                                                                             WHVL 422
                                                                                                                                                                                                                                                                                                                                             sfeipfeqiqkvqvvvtvldydklgkneaigkifvgsnatgtelrhwsdmlanprrpiag
                                                                                                                                                                                                                                                                                                                                                                                                                                            STTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENAT 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EFDEIP----TVVGIFSAFGLVFTVSLFA---WICCQRKSSKSNKTPPYKFVHVLKGVDI 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ld-mggtsdpyvkvfllpdkkkkyetkvhrktlnpafnetftf-kvpyqelggktlvmai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -knamnmkdmkggqdddda-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page 14-15; 19pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      422 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                (first
                                                                                                                                                                                                  Protein;
                                                                                                                                  entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27.4%;
35.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63;
                                                                                                                                                                                                  474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 603.5; DB 1/,
Pred. No. 1.2e-47;
""Gmatches 127;
ntiarthritic; immunosuppressant; ca
coagulant; vasotropic; antidiabeti
mmunosuppressive; antiinflammatory;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----etglteg-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 17;
                                                  nootropic; neuroprotective;
                                                                cytostatic; hepatotropic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hormone
                  antidiabetic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     release
                                cardiant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                              418
                                                                                                                                                                                                                                                                                                                                                                                                              344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         105
                                                                                                                                                                                                                                                                                                                                                                                                                                              358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12;
```

dermatological;

immunosuppressive;

```
δÃ
                                                                                                                                                                                                                                                                 Вþ
                                                                               밁
                                                                                                             γQ
                                                                                                                                                                                                                                                                                             which represent the human ORFX open reading frames it to 3161. The ORFX of sequences have activities such as: cytostatic; hepatotropic; vulnerary; cantiparxinsonian; nootropic; neuroprotective; contemporation anticonvulsant; antiarthritic; immunosuppressant; immunostimulant; cardiant; thrombolytic; coagulant; vasotropic; antidiabetic; hypotensive; dermatological; immunosuppressive; antidiabetic; hypotensive; dermatological; immunosuppressive; cantilinflammatory; antibacterial; antiviral; antifungal; antirheumatic; cantifungal; and antianaemic. The sequences can be used for determining the presence of or predisposition to, or preventing or treating cantidiated with an ORFX-associated disorder. The nucleic acids can be used to express ORFX proteins in gene therapy cyclors. The proteins and nucleic acids may be used to treat cancers, cardiovascular disease, diabetes mellitus, hypertension, hypothyroidism, cholesterol ester storage, systemic lupus crythematosus, severe combined immunodeficiency (SCID), AIDS, viral, cardiovascular disease, disorders, asthma, allergies, aplastic anaemia, burns, wounds, bone and cartilage damage, cocupinal haemoglobinuria, antiinflammatory disease; to enhance cocupined and antinflammatory disease; to enhance
                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-MAR-1999;
02-APR-1999;
05-APR-1999;
30-MAR-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       antiviral; antibacterial; antifungal; antirheumatic; antithyroid; antianaemic; gene therapy; cancer; proliferative disorder; hypertension neurodegenerative disorder; osteoarthritis; graft vs host disease; cardiovascular disease; diabetes mellitus; hypothyroidism; SCID; AIDS; cholesterol ester storage; systemic lupus erythematosus; infection; severe combined immunodeficiency; malaria; autoimmune disorder; asthma; allergy; aplastic anaemia; nocturnal haemoglobinuria; burn; wound; bone damage; cartilage damage; antiinflammatory disease; coagulation; thrombosis; contraceptive.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel nucleic acids and peptides derived from open reading frame useful for treating e.g. cancers, proliferative disorders, neurodegenerative disorders and cardiovascular disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAC74446 to AAC77606 encode the proteins given in AAB40237 to AAB43397, which represent the human ORFX open reading frames 1 to 3161. The ORFX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 11; Page 2647-2648; 5507pp; English.
                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Shimkets RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CURA-) CURAGEN CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31-MAR-2000; 2000WO-US08621.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200058473-A2
  106 trrisslesr----
                                       95
                                                                               60
                                                                                                                                                                                 Local Similarity
                                       ----DLEKRDLNGNFPKTNLKPGSPSDLENATPKLF--LEGEKESVSPESLKSS----- 142
                                                                          wlmasrssdkdgds-----vhtasevpltprtnspdgrrsssdts-----kstysl 105
                                                                                                                  WICCORKSSKSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAC76182
                                                                                                                                                                                                                                                                 474 AA;
                                                                                                                                                            21.1%;
ilarity 30.3%;
Conservative 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0127728
2000US-0540763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Leach M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99US-0127607.
99US-0127636.
----rpssp--lidikpiefgvlsakkepiqpsvlrrtynpdd 152
                                                                                                                                                                          Score 464.5; DB Pred. No. 1.3e-34
                                                                                                                                                            Mismatches 152;
                                                                                                                                                                                                  DB 21;
                                                                                                                                                            Indels
                                                                                                                                                                                               Length 474;
                                                                                                                                                          83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypertension
                                                                                                                                                          Gaps
                                                                                                                    94
                                                                                                                                                          15;
```

```
RESULT
AAM40253
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                          21-JAN-2000;
25-APR-2000;
09-JUL-2000;
                                                                                                                                                                                                        19-JUL-2000;
03-AUG-2000;
14-SEP-2000;
                                  Novel nucleic acids and such as central nervous
                                                                                                                                                                                                                                                                                                                                                                                                  Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance peripheral nervous system; neuropathy; central nervous system; cNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAM40253 standard; Protein; 474 AA.
                                                                                                                                                                                                                                                                                                                   26-JUL-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human polypeptide SEQ ID NO 3398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAM40253;
                                                                                                                                                         (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                            26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               446 thrtaveqwhslrsraecd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            æ
                                                                                                       , r v
                                                                    2001-442253/47.
DB; AAI59409.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YPRRQIAKWHVL----CD 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           yfrkfephlysldsnsddvdsltdeeilskyqlgmlhfstqydllhnhltvrvieardlp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pfynesfsfkvpqeelenaslvftvfghnmkssndfigrivigqyssgpsetnhwrrmln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEG-TGGEHWKEICD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             llslnylpsagrlnvdvirakqllqtdvsqgsdpfvkiqlvhglklvktkktsflrgtid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LISLCYQSTTNTLTYVYLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rtllltvvdfdkfsrhcvigkvsvplcevdlvkgghwwkali-----pssqnevelgel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ppishdgsrqdmahsnpyvkicllpdqknskqtgvkrktqkpvfeerytf-eipfleaqr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AM-----DEQSMT-SDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQE
                                                                                                         , Liu C,
Wang Z,
Zhou P,
                                                                                                                                                                              2000US-0488725.

2000US-0552317.

2000US-0598042.

2000US-0620312.

2000US-0623450.

2000US-0652191.

2000US-0693036.

2000US-0727344.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ------TSLTSEE--KQEKLGTLFFSLEYNFERKAFVVNIKEARGLP
                                                                                                       Asundi V, Ch
Wehrman T, X
, Goodrich R,
                                polypeptides, useful for treating disorders system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 464
                                                                                                      Chen R, Ma Y,
Xu C, Xue AJ,
R, Drmanac RT;
                                                                                                                    Qian XB,
Yang Y,
                                                                                                                   Yang
                                                                                                                   Ren F,
Zhang J;
                                                                                                                               Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      291
                                                                                                                                 Ď,
```

SEQ ID NO 3398; 10078pp; English

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 30.3
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM3642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathles and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activin/inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.
                     chemokinetic;
                                   peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic;
                                                                                                                                 Human polypeptide
                                                                                                                                                                        22-OCT-2001
                                                                                                                                                                                                                                                 AAM42039 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Note: The sequence data for this patent did not form part of the printed
                                                                        peripheral
                                                                                            Human; nootropic; immunosuppressant; cytostatic;
                                                                                                                                                                                                                                                                                                                                             446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106
                                                                                                                                                                                                                                                                                                                                                                                                                        386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35
                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                             thrtaveqwhslrsraecd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          wlmasrssdkdgds-----kstysl 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WICCORKSSKSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHL 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LALHFTILSFDRFSRDDIIGEVLIPLSGIELSEG----KMLMNREIIKRNVRKSSGRGEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AM-----DEQSMT-SDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQE 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            yfrkfephlysldsnsddvdsltdeeilskyqlgmlhfstqydllhnhltvrvieardlp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     trrisslesr-----rpssp--lidikpiefgvlsakkepigpsvlrrtynpdd 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----DLEKRDLNGNFPKTNLKPGSPSDLENATPKLF--LEGEKESVSPESLKSS----- 142
                                                                                                                                                                                                                                                                                                                                                                                   YPRRQIAKWHVL----CD 424
                                                                                                                                                                                                                                                                                                                                                                                                                    pfynesfsfkvpqeelenaslvftvfghnmkssndfigriviggyssgpsetnhwrrmln
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEG-TGGEHWKEICD 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rtllltvvdfdkfsrhcvigkvsvplcevdlvkgghwwkali-----pssqnevelgel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ppishdgsrqdmahsnpyvkicllpdqknskqtgvkrktqkpvfeerytf-elpfleaqr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               llslnylpsagrlnvdvirakqllqtdvsqgsdpfvkiqlvhglklvktkktsflrgtid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----TSLTSEE--KQEKLGTLFFSLEYNFERKAFVVNIKEARGLP 181
                                                                                                                                                                    (first entry)
                   thrombolytic;
                                                                                                                                 SEQ ID NO 6970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21.1%; Score 464.5; DB 22; Length 30.3%; Pred. No. 1.3e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ::
::
::
                                                                                                                                                                                                                                                                                                                                             464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71; Mismatches 152;
                                                                                                                                                                                                                                                 507
                   drug
                   screening;
                                                                                            gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        83;
                                                                          cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15;
```

```
밁
                                                                                                     Ş
                                                                                                                                                            DЪ
                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                 QУ
                                                                                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 133; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-APR-2000;
09-JUL-2000;
19-JUL-2000;
03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activinyinhibin activity, chemotactic/chemokinetic activity, harmostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and assays for receptor activity, arthritis and inflammation, leukaemias and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tang
Wang
Zhao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      specification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 2; SEQ ID NO 6970; 10078pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel nucleic acids and polypeptides, useful for treating such as central nervous system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (HYSE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-SEP-2000;
19-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
  236
                                                    246
                                                                                                                                                            186
                                                                                                                                                                                                                 143
                                                                                                                                                                                                                                                                  139
                                                                                                                                                                                                                                                                                                                                                                        93
                                                                                                                                                                                                                                                                                                                    95
                                                                                                                                                                                                                                                                                                                                                                                                                            35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-442253/47.
DB; AAI61195.
LALHFTILSFDRFSRDDIIGEVLIPLSGIELSEG----KMLMNREIIKRNVRKSSGRGEL
                                                                                                                                                                                                                                                                                                                                                                        wlmasrssdkdgds-----vhtasevpltprtnspdgrrsssdts-----kstys1 138
                                                                                                                                                                                                                                                                                                                                                                                                                         WICCORKSSKSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHL
                                              ppishdgsrqdmahsnpyvkicllpdqknskqtgvkrktqkpvfeerytf-eipfleagr
                                                                                                                                                    y frk fephly sldsnsddvd sltde eilsky qlgmlhfst qydllhnhltvrvie ardlpart fernigen for the state of the state
                                                                                                                                                                                                                                                                                                                    ----DLEKRDLNGNFPKTNLKPGSPSDLENATPKLF--LEGEKESVSPESLKSS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         disorders.
The sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 , Liu C,
Wang Z,
, Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               507 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000US-0552317.
2000US-0598042.
2000US-0620312.
2000US-0653450.
2000US-0662191.
2000US-0693036.
2000US-0727344.
                                                                                                     -DEQSMT-SDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQE
                                                                                                                                                                                                           -----TSLTSEE--KQEKLGTLFFSLEYNFERKAFVVNIKEARGLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000US-0488725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Asundi V,
Wehrman T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goodrich R,
                                                                                                                                                                                                                                                               -----rpssp--lidikpiefgvlsakkepiqpsvlrrtynpdd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21.1%; Score 464.5; DB 2 30.3%; Pred. No. 1.4e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for this patent did not form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chen R,
Xu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ą, ĸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                152;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22; Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Yang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                у×в,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               part
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ren
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            94
                                                                                                                                                                                                                                                                                                                      142
                                                                                                                                                            245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15;
```

```
RESULT :
AAW25032
ID AAW
          밁
                                                 Q
                                                                                                                           В
                                                                                                                                                                                QY
                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               $\times CCCCCCX\times T\times 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 118; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW25032 is the Doc2-beta protein containing two C2 regions, it was isolated from the human colon cancer cell line SW480. The protein at DNA encoding it are useful for the production of products for the diagnosis of colon cancer. A vector and transformed host cell are also claimed and the protein can be produced recombinantly.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; Page 6-8; 10pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08-DEC-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Doc2-beta; colon cancer; C2 region; neoplasia; tumour; recombinant; diagnosis; human cell line SW480; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New human colon cancer protein Doc2 beta - has two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SHIO ) SHIONOGI & CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-DEC-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JP09154586-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human Doc2-beta colon cancer protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-OCT-1997 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW25032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW25032 standard; Protein; 412 AA
                                                           196 MTILP--EKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDI 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             479 thrtaveqwhslrsraecd 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411 YPRRQIAKWHVL----CD 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             359
                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                                                                                        84 KPAV-----PKNSLHLDLEKRDLNGNFPKTNLKPG-SPSDLENATPKLFLEGEKESVS 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
lhllpgaskanklrtktlrntlnptwnetltyygitdedmirktlrisvcdedkfrhnef 227
                                                                                                                                                                                   PESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIK 195
                                                                                                                       yes-----ddctalgtldfsllydqennalhctitkakglkpmdhngl-adpyvk 167
                                                                                                                                                                                                                                               rpavagagrrspsdgaredde--dvdqlfgaygsspgpspgpsparppakppedepdadg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1997-367066/34.
DB; AAT79627.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pfynesfsfkvpqeelenaslvftvfghnmkssndfigriviggyssgpsepnhwrrmln 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEG-TGGEHWKEICD 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LISLCYQSTINTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPN 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               412 AA;
                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                95JP-0320881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95JP-0320881
                                                                                                                                                                                                                                                                                                                                                                                                19.4%; Score 428;
33.3%; Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                           57; Mismatches
                                                                                                                                                                                                                                                                                                                                                                           DB 18;
2.6e-31;
hes 151;
                                                                                                                                                                                                                                                                                                                                                                                                                            Length 412;
                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   regions
                                                                                                                                                                                                                                                                                                                                                                           28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                       8
```

```
δõ
                             DЬ
                                                     QΥ
                                                                                      DЬ
                                                                                                                Оy
                                                                                                                                                 Db
                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                     рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR57421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                             This sequence represents a low molecular weight G protein target protein, designated rab3A p25. Rabphilin-3A (Rab3A) is distributed specifically in brain tissue and participates in the release of nerve transmitter substance and is useful in the study of its
                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Page 6-9; 9pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                       substance
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Target protein of a low molecular G protein rabphilin-3A (RAB3A) - found in the brain and involved in release of nerve transmitter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Low molecular weight; G protein; target protein; rab3A p25; Rabphilin-3A; brain; nerve transmitter.
                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                 secretion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-DEC-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24-DEC-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-JUL-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JP06184199-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rabphilin-3A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR57421 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (EISA ) EISAI CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-MAR-1995
                                                                                                                                                                   112 PGSPSDLENATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFV 171
                                                                                     421 ctiikakglkpmdsngl-adpyvklhllpgasksnklrtktlrntrnpiwnetlvyhgit 479
                                                                                                                  172 VNIKEARGLPAMDEQSMTSDPYIKMTILP--EKKHKVKTRVLRKTLDPAFDETFTFYGIP 229
                                                                                                                                               361 pgsytqasaaapqpvvasarqppppeedeeeansydsdeattlgalefsllydqdnsslh 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             348 kkslevtvwdydigksndfiggvvlgihakgerlkhwfdclknkdkrierwhtl 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                254
                                                                                                                                                                                                                          ocal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                           dedmqrktlrisvcdedkfghnefigetrfslkklkpnqrknfniclervipmkragttg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IGEVLIPLSGIELSEGK---MLMNRE--IIKRNVRKSSGRGELLISLCYQSTTNTLTVVV 308
---GKMLMNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1994-252836/31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                       YTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        vrcahlaamdangysdpyvktylrpdvdkkskhktavkkktlnpefneefcyeikhgdla 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLE 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               igetrvplkklkpnhtktfniclekglpvdktedksleergrilislkyssqkqgllvgi 287
                                                                                                                                                                                                              99;
                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAQ67062.
                                                                                                                                                                                                                                                                                     704
                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92JP-0344055.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92JP-0344055.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                          18.5%; Score 408; DB 15; 29.4%; Pred. No. 4.2e-29; tive 65; Mismatches 145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        704
                                                                                                                                                                                                                                      Length 704;
                                                                                                                                                                                                            Indels
                                                                                                                                                                                                            28;
                                                                                                                                                                                                          Gaps
                                                          268
                                                                                                                                                                                                            4
```

```
AAY2772
ID AAY272
XX AAY2772
XX AAY2772
XX AAY2772
XX AAY2772
XX Fransg
XX Transg
XX Transg
XX JP1119
XX JP1119
XX JP1119
XX JP1119
XX AAY272
XX AAY27
DE WWI; 1
DR WPI; 1
CR The in
CC Th
                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dр
   В
                                                       Qy
                                                                                                                            В
                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention provides a transgenic mouse in which the sequence encoding the Doc2alpha protein is deleted. The mouse is useful as an experimental animal for the elucidation of causes of diseases in nervous and endocrine systems and the development of treating methods. The present sequence represents the mouse Doc2alpha protein sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 8-10; 13pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New transgenic mouse in which Doc2alpha is deleted - used diagnosis of nervous system and endocrine disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1999-496580/42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JP11196709-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transgenic mouse; Doc2alpha; nervous disease; endocrine system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mouse Doc2alpha protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22-OCT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY27275;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY27275 standard; Protein; 405 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (SHIO ) SHIONOGI & CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 386 EVIGOLVLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     599
                                                                                                                                                                                                                                                        113
                                                                                                                                                                                                                                                                                                                      172
                                                                                                                                                                                                                                                                                                                                                                                                                                           112 PGSPSDLENATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFV 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540 sargmalyeeeqver-igdieergkilvslmystqqgglivgiircvhlaamdangysdp 598
232 aalrgiscylkeleqaeqgpglleergpillslsyssrrhgllvgivrcahlaamdvngy
                                                                                                                                                                                                                                                                                                                                                                             58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dyiggcqlgisakgerlkhwyeclknkdkkierwhql
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRN 385
                                                                                                                     dddithkvlrisvcdedklshnefigeirvplrrlkpsqkkhfniclerqvplpspssms
                                                                                                                                                                                                                                                 crilrakglkpmdfngl-adpyvklhllpgackanklktktgrntlnpvwneeltysgit 171
                                                                                                                                                                                                                                                                                                               VNIKEARGLPAMDEQSMTSDPYIKMTILPE--KKHKVKTRVLRKTLDPAFDETFTFYGIP 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             106;
                                                          -----IKRNVRKSSG-----RGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGL 322
                                                                                                                                                                                          YTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGK---MLMNREI-----
                                                                                                                                                                                                                                                                                                                                                                             pahlaplalappaall----gattpddgaevdsydsdd-ttalgtlefdllydgascmlh 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fvklwlkpdmgkkakhktqikkktlnpefneeffydikhsdlakksldisvwdydigksn 658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAZ00321.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   405 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98JP-0001925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98JP-0001925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17.9%; Score 393.5; DB 20; Length 31.2%; Pred. No. 4.1e-28; vative 55; Mismatches 144; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     endocrine
   291
                                                                                                                            231
                                                                                                                                                                                          277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
```

```
RESULT 13
AAW01114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                           20
                                                           DЪ
                                                                                        QΥ
                                                                                                                        Db
                                                                                                                                                  δÃ
                                                                                                                                                                                  Вb
                                                                                                                                                                                                               Qγ
                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                                                                                     ΧX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               XX XX XX DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ρ
 멍
                                                                                                                                                                                                                                                                                                        Query Match 17.5%; Score 384.5; DB 1
Best Local Similarity 32.0%; Pred. No. 2.8e-27;
Matches 102; Conservative 50; Mismatches 136
                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence is that of a brain-specific protein, Doc2. It is useful in the elucidation of neurotransmitter releasing mechanisms. The gene (AATM40750) and anti-Doc2 antibodies are useful for the development of diagnostic and therapeutics for the cerebral nervous system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA encoding brain-specific protein, Doc2 - of neuro:transmitter releasing mechanisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1996-357242/36.
N-PSDB; AAT40760.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW01114 standard;
                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Page 10-12; 15pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-DEC-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  02-JUL-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JP08168385-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cerebral nervous system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Doc2; brain-specific; neurotransmitter; diagnostic; therapeutic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Brain-specific protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-NOV-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW01114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (SHIO ) SHIONOGI & CO
                                                                                                                                                                                                                                                                             133
 308
                              344
                                                                                                                        188
                                                                                                                                                251 DDIIGEVLIPLSGIELSEGK---MLMNREI------IKRNVRKSSG-- 287
                                                                                                                                                                                     128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            352 ksndfiggvslgpgargeaqkhwndclhqpdtalerwhtl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         323
                                                                                                                                                                                                                                               70 attpedgaevdsydsdd-atalgklefdllydrasctlhvcilrakglkpmdfngl-adp 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERG
                 HVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGE
                                                         SVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDP 192
cvkkktlnpefneeffyeielstlatktlevtvwdydigksndfiggvslgpgargeark
                                                                                                                     ne figeir v plrrlk ps qkkh fnicler gv plaspssmsaalr giscylkdle qae qg qg\\
                                                                                                                                                                                  yvklhllpgackanklktktqrntlnpvwnedltysgitdddithkvlriavcdedklsh\\
                                                                                                                                                                                                               YIKMTILPE--KKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTILSFDRFSR 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sdpyvktylrpdvdkkskhktcvkkktlnpefneeffyeielstlatktlevtvwdydig
                                                                                         ----RGELLISLCYOSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKT
                                                                                                                                                                                                                                                                                                                                                                                     400 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94JP-0257205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94JP-0320775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Doc2
                                                                                                                                                                                                  400
                                                                                                                                                                                                                                                                                                            Mismatches 136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΑA
                                                                                                                                                                                                                                                                                                                                    DB 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            is useful in elucidation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               391
                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                            31;
                                                                                                                                                                                                                                                                                                        Gaps
                                                           307
                                                                                         343
                                                                                                                        247
                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         382
                              403
                                                                                                                                                                                                                                                                                                            6;
```

B 8

404 368

HWKEICDYPRRQIAKWHVL 422 || : :|| | hwsdclqqrdaalerwhtl 386

```
Š
                                               В
                                                                             δÃ
                                                                                                                                                                                                                    The present invention describes a method of screening for agonists or cantagonists of the binding between Doc2-alpha and Munc13. The method comprises reacting Doc2-alpha or its homologue with Munc13 or its homologue optionally in the presence of a test substance and selecting the substances which increase or decrease binding. Also described are:

(1) an agonist or antagonist of the binding between Doc2-alpha and Munc13 selected by the above method; (2) a vector expressing Doc2-alpha or its homologue used for inhibiting Ca ion-dependent secretion of a neurotransmitter or hormone; (3) a vector expressing Munc13 or its homologue used for inhibiting Ca ion-dependent secretion of a neurotransmitter or hormone; (4) a fusion protein between Doc2-alpha or its homologue and a carrier protein; (5) a fusion protein between Munc13 or its homologue and a carrier protein; (6) a polypeptide containing and comprises at most 90 amino acids; and (7) a polypeptide containing amino acids 851-1461 of the sequence of Munc13, which binds with Munc13 and comprises at most 904 amino acids. The agonist or antagonist or antagonist or treat diseases of the nervous system. The present or sequence represents human Doc2-alpha.
                                                                                                                Matches
                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Screening for agonists or antagonists of binding between Doc2-alpha and Muncl3 - used to treat diseases of the nervous system
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JP10313866-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muncl3; Doc2-alpha; interacting calcium ion dependent secretion fusion protein; nervous disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-MAR-1999 (first
OIHS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human Doc2-alpha.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW83429;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW83429 standard;
                                              70 attpedgaevdsydsdd-atalgklefdllydrasctlhvcilrakglkpmdfngl-adp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14
                                                                               SVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDP 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1999-074148/07.
                                                                                                                  102;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein;
                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Page 16-20; 33pp; Japanese.
                                                                                                                                                                                             400 AA;
                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97JP-0126118.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Protein;
                                                                                                                         17.5%;
                                                                                                                50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        400
                                                                                                                             Score 384.5;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            domain; screening; agonist; antagonist;
inhibitor; neurotransmitter; hormone;
                                                                                                                Mismatches
                                                                                                                             DB 20;
                                                                                                              136;
                                                                                                              Indels
                                                                                                                                          Length 400;
                                                                                                          31;
                                                                                                            Gaps
                                                 127
                                                                                                              6,
```

```
RESULT 1
AAY12318
        γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
AAX41094 to AAX41347 represent 5' expressed sequence tags (ESTs) for human secreted proteins, and encode the proteins given in AAY12261 to AAY12314, respectively. The proteins given represent the signal peptide and an N-terminal fragment of a secreted protein. The nucleic acid sequences can be used for producing secreted human gene products. They can also be used to develop products for diagnosts and therapy. The proteins obtained may have cytokine activity, cell proliferation/differentiation activity, haematopoiests regulating activity, tissue growth regulating activity, reproductive hormone regulating activity, rechemotactic/ chemotheric activity, haemostatic and thrombolytic activity, receptor/ ligand activity, anti-inflammatory activity, tumour inhibition activity or other activities. The products can be used in forensic, gene therapy and chromosome mapping procedures. The sequences can also be used for obtaining corresponding promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; secreted protein, EST; expressed sequence tag; diagnosis; forensic; gene therapy; chromosome mapping; signal peptide; upstream regulatory sequence; cytokine activity; cell proliferation; differentiation; haematopoiesis regulation; tissue growth regulation reproductive hormone regulation; chemotactic; chemokinetic; haemosta thrombolytic; anti-inflammatory; tumour inhibition.
                                                                                                                                                                                                                                                                                                                     New nucleic acids encoding human secreted proteins - obtained cDNA libraries prepared from e.g. liver, ovary, brain, prostat kidney, lung, umbilical cord, placenta and colon tissue
                                                                                                                                                                                                                                                                                    Claim 27; Page 686-687; 824pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Duclert A, Dumas Milne Edwards J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-AUG-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     31-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human 5' EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY12318;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY12318 standard; Protein; 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GEST ) GENSET.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    368 hwsdclqqrdaalerwhtl 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               128
                                                                                                                                                                                                                                                                                                                                                                                                   1999-153778/13.
DB; AAX41151.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----RGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cvkkktlnpefneeffyeielstlatktlevtvwdydigksndfiggvslgpgargeark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nefigeirvplrrlkpsqkkhfniclerqvplaspssmsaalrgiscylkdleqaeqgqg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DDIIGEVLIPLSGIELSEGK---MLMNREI------IKRNVRKSSG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             y \verb|vklh| lpgackanklktktqrntlnpvwnedltysgitdddithkvlriavcdedklsh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             secreted protein SEQ ID NO:349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97us-0905135.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98WO-IB01222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lacroix
                                                                                                                                                                                                                                                                                                                                          prostate,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   haemostatic;
                                                                                                                                                                                                                                                                                                                                                              from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   343
```

Sea: Job	Qу	Оy	% & &	22 22 22 23 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25
Search completed: December 12, 2001, 10:54:23 Job time: 34 sec	61 DIYPENLNSKKK 72 61 diypenlnskkk 72	1 MAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYKFVHYLKGV 60 	Query Match 16.9%; Score 373; DB 20; Length 72; Best Local Similarity 98.6%; Pred. No. 2.5e-27; Matches 71; Conservative 0; Mismatches 1; Indels 0; Gaps 0;	sequences. The nucleic acids encoding the signal peptide can be used for directing extracellular secretion of a polypeptide or the insertion of a polypeptide into a membrane, or importing a polypeptide into a cell. Sequence 72 AA;

,						
•						
•						
•						
	,					
		·		•		
·		•	,			
				*		
						•
					·	
			•	•		

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on:
 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
 594.5
592
592
593
581
581
579.5
577.5
573.5
573.5
574.5
520
424.5
520
430.5
430.5
334.5
3393.5
3393.5
                                                                                                                                                                                                                                                                                                                                                                                     2006
627.5
623.5
623.5
603.5
603.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match
 Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-680-121-2
2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     219241 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                December 12, 2001, 10:53:49 ; Search time 16 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAPITTSREEFDEIPTVVGI.....KEICDYPRRQIAKWHVLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapext 0.
                                ASS4172

ASS339

AH0415

A40707

PC6300

BMHU1Y

A45486

H0413

S09595

H04114

H04114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (without alignments)
2023.387 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    219241
                                                                                                                                                    céllutagmin II syt
synaptotagmin - fr
synaptotagmin II -
synaptotagmin II -
synaptotagmin II -
synaptotagmin I syt
cellutagmin - ca
synaptotagmin - ca
synaptotagmin I -
synaptotagmin I -
synaptotagmin I -
synaptotagmin p65
synaptotagmin p65
synaptotagmin y -
synaptotagmin V -
synaptotagmin V -
synaptotagmin III
synaptotagmin III
synaptotagmin III
synaptotagmin III
synaptotagmin III
                                               hypothetical prote
rabphilin-3A - bov
rabphilin-3A - mou
rabphilin-3A - rat
                                                                                                                                hypotnects
synaptotagmin III
synaptotein - rat
                                                                                                                       doub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
                  hypothetical prote
doc2 protein - hum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            synaptotagmin
                                                                                                                     le C2
                                                                                                                       protein
```

ALIGNMENTS

PC1

A; Reference number: 158163; MUID:95085772

A; Accession: 158163
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 1-425 < RE2>
A; Cross-references: EMBL:U14398; NID:9550453; PIDN:AAA68519.1; PID:9550454
C; Superfamily: synaptotagmin; protein kinase C C2 region homology
F;147-262/Domain: protein kinase C C2 region homology < KC2A>
F;281-396/Domain: protein kinase C C2 region homology < KC2B> synaptotagmin IV - rat
()Species: Rattus norvegicus (Norway rat)
()Species: Rattus norvegicus (Norway rat)
()C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 13-Aug-1999
()Accession: I59355; I58163
R;Vician, L.; Lim, I.K.; Ferguson, G.; Tocco, G.; Baudry, M.; Herschman, H.R.
Proc. Natl. Acad. Sci. U.S.A. 92, 2164-2168, 1995
Proc. Natl. Acad. Sci. U.S.A. 92, 2164-2168, 1995
A;Title: Synaptotagmin IV is an immediate early gene induced by depolarization
A;Reference number: I59355; MUID:95199312
A;Accession: I59355 A;Cross-references: GB:L38247; NID:g598376; PIDN:AAA67327.1; PID:g598377 R;Ullrich, B.; Li, C.; Zhang, J.Z.; McMahon, H.; Anderson, R.G.; Geppert, Neuron 13, 1281-1291, 1994 Q 밁 δõ 밁 Qy В QΥ 망 δÃ A; Title: Functional properties of multiple synaptotagmins in brain. A; Reference number: I58163; MUID:95085772 A; Molecule type: mRNA A; Residues: 1-425 < RES> A;Status: preliminary; translated from GB/EMBL/DDBJ Query Match Best Local Similarity Matches 241 241 181 181 121 121 61 61 _ ATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGL 180 MAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYKFVHVLKGV 60 PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHF DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN 120 VTPKLFPETEKEAVSPESLKSSTSLTSEEKQEKLGTLFLSLEYNFEKKAFVVNIKEAQGL DIYPENLSSKKKFGGDDKSEAKRKAALPNLSLHLDLEKRDLNGNFPKTNPKAGSSSDLEN MAPITTSRVEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRRSAKSNKTPPYKFVHVLKGV 60 PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPVFDETFTFYGVPYPHIQELSLHF 382; Conservative 91.1%; 89.9%; 21; Score 2006; Pred. No. 1 Mismatches .5e-131; BB Length 425; induced by depolarization Indels 0; Gaps 300 240 120 240 .∡ .. 0; Sudhof 'n

д δÃ Дb ρ 94 60

```
SESULT
SESSIAN
SESSIAN
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Decies: L2-Feb-1998 #sequence_revision 20-Feb-1998 #text_change 13-Aug-1999
C;Accession: S58400
R;L1, C; Ullrich, B; Zhang, J.Z.; Anderson, R.G.W.; Brose, N.; Suedhof, T.C.
Nature 375, 594-599, 1995
Nature 375, 594-594, 1995
Nature 375, 594-594, 1995
A;Title: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent and -independent activities of neural and non-neural synaptota
A;Ritle: Ca(2+)-dependent activities of neural and non-
           BMFFSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                              420
                                                                                                                                    399
                                                                                                                                                                                                                                                             339
                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                      279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421 VLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Sinhes 153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27 VFTVSL----FAWIC--CORKSSKSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADD--
                                            w
                                                                                                                                                                                                                                                                                                                                                                                  SANSITVNIIKARNLKAMDIGGTSDPYVKVWLMYKDKRVEKKKTVTKKRNLNPIFNESFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TWILTYVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKHYKKCTPNAVENBLEVE
                                                                                                                                    TÖH
                                                                                                                                                                                                  HVL 422
                                                                                                                                                                                                                                                                                                            FDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALH
                                                                                                                                                                                                                                                             FDIPTEKLRETTIIITVMDKDKLSRNDVIGKIYLSWKSGPGEVKHWKDMIARPRQPVAQW
                                                                                                                                                                                                                                                                                                                                                                                                                                         TTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LQVLDYDRESRNDPIGEVSIPLNKVDLTQ--MQTFWKDLKPCSDGSGSRGELLLSLCYNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LPAKD-FSGTSDPFVKIYLLPDKKHKLETKVKRKNLNPHWNETFLFEGFPYEKVVQRILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LFLEGEKESVSPESLKSSTSLTSEE-----KQEKLGTLFFSLEYNFERKAFVVNIKEARG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RGRGEKKAIKLPAGGKAVNTAPVPGQTPHDESDRR----TEPRS----SVSDLVN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IITVSLSVTIVLCGLCHWCQRKLGKRYK-------NSLETVGTPDSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----KNEVK-----NKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPK 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----SLTSEMLMLSPGSEEDEAHEGCSRENLGRIQFSVGYNFQESTLTVKVMKAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                    401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 627.5; DB 2;
Pred. No. 4.2e-36;
2; Mismatches 127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                         398
                                                                                                                                                                                                                                                                                                                    419
                                                                                                                                                                                                                                                                                                                                                                                                                                             359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            synaptotagmin - fruit fly (Drosophila melanogaster)

N;Alternate names: p65
C;Species: Drosophila melanogaster
C;Date: 30-Sep1992 #sequence_revision 30-Sep-1992 #text_change 22-Jun-1999
C;Accession: B39052
C;Accession: B39052
R;Perin, M.S.; Johnston, P.A.; Oezcelik, T.; Jahn, R.; Francke, U.; Suedhof, T.C.
J. Biol. Chem. 266, 615-622, 1991
A;Title: Structural and functional conservation of synaptotagmin (p65) in Drosophila
A;Reference number: A39052; MUID:91093190
A;Accession: B39052
A;Accession: B39052
A;Accession: B39052
A;Molecule type: mRNA
A;Residues: 1-474 
A;Cross-references: GB:M55048; GB:J05711; NID:g158526; PIDN:AAA28925.1; PID:g158527
C;Comment: Synaptotagmins are a major component of synaptic vesicle membranes and are
A;Gene: FlyBase:syt
A;Cross-references: FlyBase:FBgn0004242
A;Map position: 23B
C;Superfamily: synaptotagmin; protein kinase C C2 region homology
C;Keywords: duplication; membrane trafficking; phospholipid binding; synaptic vesicle
F;1107/Domain: intravesicular #status predicted <INT>
F;106-134/Domain: crransmembrane #status predicted <EXT>
F;135-474/Domain: protein kinase C C2 region homology <KC2A>
F;319-434/Domain: protein kinase C C2 region homology <KC2A>
RESULT 4
$33318
$37aptotagmin - longfin squid
$7aptotagmin - longfin squid
$7.Species: Loligo pealeil (longfin squid)
$7.Species: Loligo pealeil (longfin squid)
$7.Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 13-Aug-1999
$7.Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 13-Aug-1999
$7.Caccession: $33318
$7.Bommert, K.; Chariton, M.P.; DeBello, W.M.; Chin, G.J.; Betz, H.; Augustin
Nature 363, 163-165, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 152; Conserv
                                                                                                                                                                                                                                                                                                                       448 ASPRRPIAQWHTLKD
                                                                                                                                                                                                                                                                                                                                                                                                                                             388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53
                                                                                                                                                                                                                                                                                                                                                     DYPRRQIAKWHVLCD 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DICESLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIAIMQNGKRLKKKKTSVKKCT
                                                                                                                                                                                                                                                                                                                                                                                                                                             LNPYYNESFSFEVPFEQMQKICLVVTVVDYDRIGTSEPIGRCILGCMGTGTELRHWSDML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PITTSREEFDEIPTVV------GIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYK 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PNAVFNELFVFDIPCEGLEDISVEFLYLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEIC 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AMNKTLVFAIFDFDRFSKHDQIGEVKVPLCTIDLAQ-TIEEWRDLV--SVEGEGGQEKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TVIQAEELPALD-MGGTSDPYVKVYLLPDKKKKFETKVHRKTLSPVFNETFTFKSLPYAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GSPSDLENATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----VDMKSVQLLGSAYKEKVQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FVHVLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKP 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PVIKKIEHVGEVVTEVIAERTGLPTWGVVAIIILVFLVVFGIIFFCVRRFLKKRRTK--- 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGR----G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                       462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 623.5; DB 1;
Pred. No. 9.9e-36;
6; Mismatches 144;
```

Length Indels

73;

Gaps

9

QΥ

дЪ Qy Вр δÃ B γQ В

B γQ

Qy g δ

Дb

DЬ

H.; Augustine,

G.J

447

387 349 289 270

327

```
A;Cross references: GB:M64488; NID:g207144; PIDN:AAA63502.1; PID:g207145
C;Comment: Synaptotagmins are a major component of synaptic vesicle membranes and a C;Superfamily; synaptotagmin; protein kinase C C2 region homology
C;Keywords: duplication; glycoprotein; membrane trafficking; phospholipid binding;
F;1-60/Domain: intravesicular #status predicted <INT>
F;81-87/Domain: transmembrane #status predicted <TMM>
F;88-422/Domain: extravesicular #status predicted <EXT>
                                                                                                                                                                                                                                                                                                                                                                                                   R;Geppert, M.; Archer III. B.T.; Suedhof, T.C. J. Biol. Chem. 266, 13548-13552, 1991
A;Title: Synaptotagmin II. A novel differentially A;Reference number: A39454; MUID:91310620
A;Accession: A39454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     synaptotagmin II - rat
C; Species: Rattus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X72386; NID:g311734; PIDN:CAA51079.1; PII C;Superfamily: synaptotagmin; protein kinase C C2 region homology F;121-235;Domain: protein kinase C C2 region homology <KC2A>F;255-370/Domain: protein kinase C C2 region homology <KC2B>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Title: Inhibition of neurotransmitter release A;Reference number: S33318; MUID:93247639 A;Accession: S33318 A;Status: preliminary A;Molecule type: mRNA A;Residues: 1-403 <BOM>
                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 1-422 <GEP>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Date: 30-Sep-1992 #sequence_revision 30-Sep-1992 #text_change 22-Jun-1999 C;Accession: A39454
                                                                                             136-382/Region: phospholipid binding #status predicted
136-349/Domain: protein kinase C C2 region homology <KC2A>
267-382/Domain: protein kinase C C2 region homology <KC2B>
32/Binding site: carbohydrate (Asn) (covalent) #status pre
  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEQIQKVSLYVTVVDYDRHWTSEPIGRTFLGCNSTGTGLRHWSDMLANPRRPIAQWHTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWHVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTILSFD 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQ 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EFDEIPTVVGIFSAFGLVFTVSLFAWICCQ----RKSSKSNKTPPYKFVHVLKGVDIYPEN 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIP 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RFSRDDIIGEVLIPLSGIELSEGKMLMN-REIIK--RNVRKSSGRGELLISLCYQSTTNT 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SGTSDPYVKVYLMPDKKKKFETKVHRKTLNPVFNESFTFKNVPYADITGKTLVFAIYDFD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELEKLPIWAIILICAGVLLFLVCGTYCCCKRICRRRGKKDGKKGLKGAVDLRGVQLL---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RFSKHDQIGQVQVAMNSIDL--GSVMEEWRDLTSPDDDAEKENKLGDICFSLRYVPTAGK 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPKLF 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LTYVILEAKNLKKMDVGGLSDPYVKISLMLNGKRIKKKKTTVKKCTLNPYYNESFAFEVP 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -ESTKS-----EVKLGKLQYSMDYDFQKGELTVNVIQAADLPGMD-M 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --GNSIKEKP------DLEELPMN------MEDNEDA---- 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28.2%;
  27.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 621; DB
Pred. No. 1.2e
71; Mismatches
Score 603.
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            No. 1.2e-3
    2e-34;
                          .
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          by C2-domain peptides implicates synapto
                                                                                                                                                                                                                                                                                                                                                                                                                                                       distributed
                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                          Length 422;
                                                                                               predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                       form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PID:g311735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                    synaptotagmin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                             are
                                                                                                                                                                                                                                                               synap
                                                                                                                                                                                                                                                                                                             #
```

```
A5541/
synaptotagmin II - mouse
C;Species: Mus musculus (house mouse)
C;Date: 10-Feb-1995 #sequence_revision 10-Feb-1995 #text_char
C;Date: 10-Feb-1995 #sequence_revision 10-Feb-1995 #text_char
C;Accession: A55417; B39454
R;Fukuda, M.; Aruga, J.; Niinobe, M.; Aimoto, S.; Mikoshiba,
J. Biol. Chem. 269, 29206-29211, 1994
A;Title: Inositol-1,3,4,5-tetrakisphosphate binding to C2B d
                                                                                                                                                                                           C;Superfamily: synaptotagmin: pro
C;Keywords: membrane trafficking
F;136-249/Domain: protein kinase
F;267-382/Domain: protein kinase
                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:D37792; GB:D37793
R;Geppert, M.; Archer III, B.T.; Suedhof, T.C.
J. Biol. Chem. 266, 13548-13552, 1991
A;Title: Synaptotagmin II. A novel differentially distributed form of synaptotagmin.
A;Reference number: A39454; MUID:91310620
A;Accession: B39454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
δÃ
                                  В
                                                                                                                                                                                                                                                               A; Cross-references: GB:M64488
                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 377-422 <GEP>
                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-422 < FUK>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                       Matches
                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
 63
                                  57
                                                                     10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LSFDRFSRDDIIGEVLIPLSGIEL----SEGKMLMNREIIKRNVRKSSGRGELLISLCYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTI 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----EGEGE-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAK 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPA 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SFEIPFEQIQKVQVVVTVLDYDKLGKNEAIGKIFVGSNATGTELRHWSDMLANPRRPIAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELF 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YDFDRFSKHDIIGEVKVPMNTVDLGQPIEEWRDLQGGE--KEEPEK---LGDICTSLRYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LD-MGGTSDPYVKVFLLPDKKKKYETKVHRKTLNPAFNETFTF-KVPYQELGGKTLVMAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENAT 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENAT 122
                                  EINKIPLPPWALIAMAVVAGLLLLTCCFCICKKCCCKKKKNKKEKG-----KGM--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TSHM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTAGKLTVCILEAKNLKKMDVGGLSDPYVKIHLMQNGKRLKKKKTTVKKKTLNPYFNESF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -KNAMNMKDMKGGQDDDDA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EFDEIP----TVVGIFSAFGLVFTVSLFA---WICCQRKSSKSNKTPPYKFVHVLKGVDI 62
                                                                     EFDEIP----TVVGIFSAFGLVFTVSLFA---WICCQRKSSKSNKTPPYKFVHVLKGVDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151;
                                                                                                       151;
                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                     Conservative
                                                                                                                         27
                                                                                                                       . 68;
                                                                                                                                                                                                                                               protein kinase C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63;
                                                                                                       63;
                                                                                                                                                                                             Score 603.5; DE Pred. No. 2e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EEKEPENLGKLQFSLDYDFQANQLTVGVLQAAELPA 171
                                                                                                                                                                                             C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                       Mismatches
                                                                                                                                                                                         region region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-Feb-1995 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                binding to C2B domain
                                                                                                                                                                                        homology
homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ------ETGLTEG
                                                                                                                                                                                                                                             C2 region
                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          127;
                                                                                                       127;
                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                        Length
                                                                                                        Indels
                                                                                                                                                                                                                                                 homology
                                                                                                        83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-Jun-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of IP4BP/synaptotag
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    229
                                    105
                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12;
                                                                                                        12;
```

```
cellutagmin I sytVI - rat
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 10-Apr-1996 #sequence_revision 19-Apr-1996 #text_change 13-Aug-1999
C;Accession: S58399
C;Accession: S58399
R;Li, C; Ullrich, B; Zhang, J.Z.; Anderson, R.G.W.; Brose, N.; Suedhof, T.C.
R;Li, C; Ullrich, B; Zhang, J.Z.; Anderson, R.G.W.; Brose, N.; Suedhof, T.C.
R;Li, C; Ullrich, B; Zhang, J.Z.; Anderson, R.G.W.; Brose, N.; Suedhof, T.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: EMBL:U20105; NID:g643653; PIDN:AAA87724.1; PII
C;Superfamily: synaptotagmin; protein kinase C C2 region homology
F;224-337/Domain: protein kinase C C2 region homology <KC2B>
F;356-471/Domain: protein kinase C C2 region homology <KC2B>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-511 <LIC>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature 375, 594-599, 1995

A;Title: Ca(2+)-dependent and -independent activities of neural and non-neural synaptot.

A;Reference number: S58399; MUID:95312080

A;Accession: S58399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                            175 KEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQ 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          115 PSDLENATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNI 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                              YPRRQIAKWHVLCD 424
                                                                                      NPVYNEAIIFDIPPENMDQVSLLISVMDYDRVGHNEIIGVCRVGISAEGLGRDHWNEMLA 485
                                                                                                                            NAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICD
                                                                                                                                                                                                             LLISLCYQSTINTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTP
                                                                                                                                                                                                                                                                                                                                                                            LKAFDLPAKDFCG-SSDPYVKIYLLPDRKCKLQTRVHRKTLNPTFDENFHF-PVPYEELA 309
                                                                                                                                                                                                                                                                               DRKLHLSVFDFDRFSRHDMIGEVILD----NLFEASDLSRETSIWKDIQYATSESVDLGE
                                                                                                                                                                                                                                                                                                            IMESLCYLPTAGRLTLTVIKCRNLKAMDITGYSDPYVKVSLLCDGRRLKKKKTTIKKNTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PTSIGRIKPELY---KQKSVDGDEAKS-----EAAKSCGKINFSLRYDYESETLIVRI 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WHSL 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SFEIPFEQIQKVQVVVTVLDYDKLGKNEAIGKIFVGSNATGTELRHWSDMLANPRRPIAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAK 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LSFDRFSRDDIIGEVLIPLSGIEL----SEGKMLMNREIIKRNVRKSSGRGELLISLCYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PTAGKLTVCILEAKNLKKMDVGGLSDPYVKIHLMQNGKRLKKKKTTVKKKTLNPYFNESF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YDFDRFSKHDIIGEVKVPMNTVDLGQPIEEWRDLQGGE--KEEPEK---LGDICTSLRYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTEYGIPYTQIQELALHFTI
:| |||||:||||:||||:|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STINTLIVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LD-MGGTSDPYVKVFLLPDKKKKYETKVHRKTLNPAFNETFTF-KVPYQELGGKTLVMAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----EGEGE------EEKEPENLGKLQFSLDYDFQANQLTVGVLQAAELPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   al Similarity
127; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -KNAMNMKDMKGGQDDDDA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 603; DB 2;
Pred. No. 2.9e-34;
4; Mismatches 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -----ETGLTEG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PID:g643654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                  365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synaptogamin o-p65-C - electric ray (Discopyge ommata)

Synaptogamin o-p65-C - electric ray (Discopyge ommata)

NAlternate names: synaptic vesicle protein o-p65-C
C:Species: Discopyge ommata
C:Species: Discopyge ommata
C:Date: 15-Jan-1993 #sequence_revision 15-Jan-1993 #text_change 13-Aug-1999
C:Accession: JH0415
C:Accession: JH0415
A:Fittle: Differential expression of the p65 gene family.
A:Fittle: Differential expression of the p65 gene family.
A:Reference number: JH0413; MUID:91273991
A:Accession: JH0415
A:Residues: 1-537 <MENN
A:Residues: 1-537 <MENN
A:Cross-references: GB:M64277; NID:9213112; PIDN:AAA49229.1; PID:9213113
A:Experimental source: electric organ
C:Superfamily: synaptotagmin; protein kinase C C2 region homology
F:33-943/Domain: hydrophobic <MYD>
F:330-343/Domain: protein kinase C C2 region homology <MC2A>
F:362-477/Domain: protein kinase C C2 region homology <MC2B>
synaptotagmin - Caenorhabditis elegans
N;Alternate names: ric-2
C;Species: Caenorhabditis elegans
C;Date: 09-Sep-1994 *sequence_revision 09-Sep-1994 *text_change
                                                                                                                                                                                                                                                                                                    Вр
                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                 410 DYPRRQIAKWHVLCD 424
                                                                                                                                                                                                                                                                                                      431
                                                                                                                                                                                                       491 ANPRKPIEQWHQLIE 505
                                                                                                                                                                                                                                                                                                                                                     350
                                                                                                                                                                                                                                                                                                                                                                                                   371
                                                                                                                                                                                                                                                                                                                                                                                                                                                    290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 103 GNFPKTNLK-----PGSPSDL-----EN-----A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      486 YPRKPIAHWHCLAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6 TSREEFDEIPTVVGIFSAF-GLVFT-VSLF-AWICC------QRKSSKSNKTPPY 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                æ
                                                                                                                                                                                                                                                                                                 LNPVYNEALVEDIPNENMEHVNVIIAVMDYDCIGHNEVIGMCRVGNATDGPGREHWNEML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VKILKALDLPAKDANGF-SDPYVKIYLLPDRKKKFQTKVHRKTLNPIFNETFQF-NVPFN
                                                                                                                                                                                                                                                                                                                                               PNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEIC
                                                                                                                                                                                                                                                                                                                                                                                             EINFSLCYLPTAGRLTITIIKATNLKAMDLTGFSDPYVKASLICDERRLKKRKTSIKKNT
                                                                                                                                                                                                                                                                                                                                                                                                                                      ELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELQNRKLHFSVYDFDRFSRHDLIGQVVLDNLLEFSDFSEDTTIW-RDILEATSEKAD-LG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYT 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SPEFGTQADEKVEQVTSIGQIKPELYKQRSIDTEAKKHQKVNCGRINFMLRYTYTTEQLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TPKLFLEGEKE-----SVSPESLKSSTSLTSEEKQEKL--GTLFFSLEYNFERKAFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -SYPESGIKLSQTSPDIPVDTSSGSKENNIPNAHSQQQVSAPPPATRFNSLPRPIPQQLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QHLHHHHSHFTDLTVERVDCGPE----- 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KFVH-----VLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLN 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRHIETDISVSLLSVIVTFCGIVLLGVSLFVSWKLCWIPWRDKGLNPQRRDSQHH---PH 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2al Similarity
156; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 594.5;
Pred. No. 1..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        red. No. 1.2e-33;
Mismatches 140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 537;
        24-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      254
```

19;

Qy B δÃ DЬ Qy B

359

299

DЪ

405 419 밁

172

Qγ g QΥ 밁

> 131 123 106

Qy

ρy Вb Qy DЪ QY Вþ δÃ Дb QΥ

310 291

Matches

В

V

```
R:Babity, J.M.; Armstrong, J.N.; Plumier, J.C.L.; Currie, R.W.; Robertson, H.A. Proc. Natl. Acad. Sci. U.S.A. 94, 2638-2641, 1997
A:Title: A novel seizure-induced synaptotagmin gene identified by differential A:Reference number: PC6300; MUID:97226006
                                                                                  synaptotagmin X - rat (fragment)
c;Spectes: Rattus norvegicus (Norway rat)
c;Date: 30-Sep-1993 #sequence_revision 29-May-1998 #text_change
C;Accession: PC6300
                                                                                                                                                                      RESULT
PC6300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A:Introns: 39/2; 72/1; 132/3; 289/3; 329/1; 373/3; 408/2 C;Superfamily: synaptotagmin; protein kinase C C2 region homology C;Keywords: membrane trafficking; transmembrane protein F;153-266/Domain: protein kinase C C2 region homology <KC2A>F;286-401/Domain: protein kinase C C2 region homology <KC2B>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: Synaptic function is impaired but A; Reference number: A40707; MUID:93313960 A; Accession: A40707
                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:U55856; NID:g1280154; PID:g1280158; PID:AAA98023.1; A;Experimental source: strain Bristol N2; clone F31E8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Residues: 1-441 < DUZ>
A; Cross-references: EMBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: Z18481
A; Accession: T16226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        submitted to the EMBL Data Library, April 1996 A;Description: The sequence of C. elegans cosmid F31E8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-441 <NON>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Accession: A40707; T16226
R; Nonet, M.L.; Grundahl, K.
Cell 73, 1291-1305, 1993
                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Map position: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Gene: snt-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Du,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Cross-references: GB:L15302; NID:g289717; PIDN:AAA28145.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                     415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       188
                                                                                                                                                                                                                                                                                                                                               362
                                                                                                                                                                                                                                                                                                                                                                                       357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         142 DAM-EQNEKEQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    70
                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GMD-MSGTSDPYVKLYLLPEKKKKVETKVHRKTLNPVFNETFIF-KVAFNEITAKTLVFA
                                                                                                                                                                                                                                                                                                     QIAKWHVL
                                                                                                                                                                                                                                                                                                                                                                     LFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGE--HWKEICDYPRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                       YQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNE 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PKLFLEGEKESVSPESLKSSTSLTSEEKQE-KLGTLFFSLEYNFERKAFVVNIKEARGLP 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPK-----TNLKPGSPSDLENAT 122
                                                                                                                                                                                                                                                             PIAQWHTL
                                                                                                                                                                                                                                                                                                                                          SFSFEVPFEQIQKVSLMITVMDYDKLGSNDAIGRCLLG--CNGTGAELRHWMDMLASPRR
                                                                                                                                                                                                                                                                                                                                                                                                                               YVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIVLMQGGKRLKKKKTSIKKCTLNPYYNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREII-----KRNVRKSSGRGELLISLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RKLFGKKRHGE-KNK-------KGGLKGFFGKGQDVVDGKNIQ-GMAQDLEELG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IYDFDRFSKHDQIGQVLIPLGKIDL--GAVIEEWKDIAPPPDDKEAEKS--LGDICFSLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                             427
                                                                                                                                                                                                                                                                                                     422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             K.; Meyer, B.J.; Rand,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---AEEKEEVKLGRIQYKLDYDFQQGQLTVTVIQAEDLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 594; DB 2;
Pred. No. 9.9e-34;
7; Mismatches 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     not eliminated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 441;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caenorhabditis elegans muta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PID:g289718
                                                                                                        13-Aug-1999
                      differential display.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                    414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141
                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSPDB:GN0
```

C;Genetics:
A;Gene: GDB:SYT1; SYT
A;Gross-references: GDB:125296; OMIM:185605
A;Map position: 12cen-12q21
C;Superfamily: synaptotagmin; protein kinase C

A;Cross-references: C;Comment: Synaptota A; Molecule type: mRNA A; Residues: 1-422 < PER>

ferences: GB:M55047; Synaptotagmins are

þ

GB:J05710; NID:g338657; PIDN:AAA60609.1; PID:g major component of synaptic vesicle membranes

PID:g338658 branes and are

synaptotagmin (p65)

'n

Drosophila

C2 region homology

A; Accession: A39052

```
A;Molecule type: mRNA
A;Residues: 1-498 <SAB>
A;Cross references: GB:085513; NID:g1932800; PIDN:AAB51686.1; PID:g1932801
C;Comment: This protein responses to seizure activity.
R;Perin, M.S.; Johnston, P.A.; Oezcelik, T.; Jahn, J. Biol. Chem. 266, 615-622, 1991
A;Tille: Structural and functional conservation of A;Reference number: A39052; MUID:91093190
                                                                C;Species: Homo sapiens (man)
C;Date: 30-Sep-1992 #sequence_revision 30-Sep-1992 #text_change
C;Accession: A39052
                                                                                                               synaptotagmin I - human
N;Alternate names: p65
                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Accession: PC6300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                 463
                                                                                                                                                                                                                                               387
                                                                                                                                                                                                                                                                                403
                                                                                                                                                                                                                                                                                                            327
                                                                                                                                                                                                                                                                                                                                            343
                                                                                                                                                                                                                                                                                                                                                                            271
                                                                                                                                                                                                                                                                                                                                                                                                             288
                                                                                                                                                                                                                                                                                                                                                                                                                                           211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                               LRKTLDPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGK
                                                                                                                                                                                                               VIGVCRTGLDAEGLGRDHWNEMLAYHRKPITHWHPL
                                                                                                                                                                                                                                  VIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                            DLSREATVWKDIHCATTESMDLGEIMFSLCYLPTAGRMTLTVIKCRNLKAMDITGSSDPY
                                                                                                                                                                                                                                                                                                                                                               MLMNREIIKRNVR----KSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VKTCGKLNFALQYDYENELLVVKIIKALDLPAKDSTG-TSDPYVKIYLLPDRKKKFQTRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DDKNEY-KNKPAVPKNSLHLDLEKRDLNGNFP---KTNLK----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IFSAFGL-VFTVSLFA-WICCQRKSSKSNKTPPYKFVHVLKGVDIYPENLNS--KKKFGA 75
                                                                                                                                                                                                                                                                              VKVSLMCEGRRLKKRKTTTKKNTLNPVYNEAIIFDIPPENVDQVSLCIAVMDYDRVGHNE
                                                                                                                                                                                                                                                                                                            VKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNE
                                                                                                                                                                                                                                                                                                                                                                                                           HRKTLNPLFDELFQF-PVVYDQLSNRKLHFSIYDFDRFSRHDMIGEVILD----NLFEVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RHNSFRRHLPRQMNVSSVDFSMGTEPVLQRGETRTS1GR1KPELYKQK-SVDSEGNRKDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EEKKEVEENEKPAPK-AIEPAIKISHTSPDIPAEVQTALKEHLIKHARVQRQTTDPTSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ------DLENATPKLFLEGEKES----VSPESLKSSTSLTSE----EK 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26.9%;
34.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 592; DB 2;
Pred. No. 1.6e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                 498
                                                R.; Francke,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <KC2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----pgsps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                u.;
                                                                                  22-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       70;
                                                  Suedhof,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                            326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        169
                                                                                                                                                                                                                                                                                                                                            402
                                                                                                                                                                                                                                                                                                                                                                                                             342
                                                                                                                                                                                                                                                                                                                                                                                                                                             270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           210
                                                                                                                                                                                                                                                                                                              386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16;
```

```
A; Status: Jreliminary
A; A; Molecule type: mRNA
A; Residues: 1-422 < CDAV>
A; Cross-references: GB:L05922; NID:g945210; PIDN:AAA87360.1; PID:g945211
A; Cross-references: GB:L05922; NID:g945210; PIDN:AAA87360.1; PID:g945211
A; Experimental source: brain
A; Experimental source: brain
A; Note: seguence extracted from NCBI backbone (NCBIN:128028, NCBIP:128029)
A; Tugal, H.B.; van Leeuwen, F.; Apps, D.K.; Haywood, J.; Phillips, J.H.
Biochem. J. 279, 699-703, 1991
A; Title: Glyyosylation and transmembrane topography of bovine chromaffin granscession: S19272; MUID:92061982
                                                                                                                                               A; Molecule type: protein
A; Residues: 113-132 <TUG>
C:Superfamily: synaptotagmin; protein kinase
F;136-249/Domain: protein kinase C C2 region
F;267-382/Domain: protein kinase C C2 region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     synaptotagmin I - bovine
N:Alternate names: 39K printing synaptic vesicle protein p65
C:Species: Bos printigenius taurus (cattle)
C:Date: 21-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 13-Aug-1999
C:Accession: A45486; S19272
R:Davletov, B.; Sontag, J.M.; Hata, Y.; Petrenko, A.G.; Fykse, E.M.; Jahn, R.;
J. Biol. Chem. 268, 6816-6822, 1993
A:Title: Phosphorylation of synaptotagmin I by casein kinase II.
A:Reference number: A45486; MUID:93203288
A:Accession: A45486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C:Keywords: dimer; duplication; glycoprotein; membrane trafficking; phospholipid binding F;1-53/Domain: intravesicular #status predicted <INT>
F;54-80/Domain: transmembrane #status predicted <FMM>
F;81-422/Domain: extravesicular #status predicted <EXT>
F;136-382/Region: phospholipid binding #status experimental F;136-249/Domain: protein kinase C C2 region homology <KC2A>
F;267-382/Domain: protein kinase C C2 region homology <KC2A>
F;25/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                   Query Match
Best Local Similarity
       Matches 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                378 FVGYNSTGAELRHWSDMLANPRRPIAQWHTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      204 NPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVDFGHVTEEWRD 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         145 KLQYSLDYDFQNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPDKKKKFETKVHRKTL 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             105 FPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLK---SSTSLT-SEEK-----QEKLG 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ocal Similarity
s 132; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTL 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MQNGKRLKKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LMNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNL 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQL 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LQSAE--KEEQEK---LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIEL----SEGKM 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FKKKNKKKGKEKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEEEKLG 144
       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                            26.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26.4%;
   65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65;
   Score 581; DB Pred. No. 7.4e 5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 581;
Pred. No. 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                   homology
                                                                                                                                                                                                                C C2 region homology
                                   DB 2;
'.4e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
7.4e-33;
   114;
                                                         Length 422;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 422;
                                                                                                                                                             <KC2B>
                                                                                                                                                                                          <KC2A>
Indels
                                                                                                                                                                                                                                                                                                                                                                   chromaffin granule p65
   20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            317
   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sudhof,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Neuron 6, 993-1007, 1991
A:Title: Differential expression of the p65 gene family.
A:Reference number: JH0413; MUID:91273991
A:Reference number: JH0413; MUID:91273991
A:Accession: JH0413
A:Mclecule type: mRNA
A:Residues: 1-427 <WEN>
A:Gross references: GB:M64275; NID:9213108; PIDN:AAA49227-1; PID:9213109
A:Gross references: GB:M64275; NID:9213108; PIDN:AAAA9227-1; PID:9213109
A:Gross references: GB:M64275; NID:9213108; PIDN:AAA49227-1; PID:9213109
A:Gross references: GB:M64275; NID:9213108; PIDN:AAA49227-1; PID:9213109
A:Gross references: GB:M64275; NID:9213108; PIDN:AAAA9227-1; PID:9213108; PID:9213108; PID:9213109
A:Gross references: GB:M64275; NID:9213108; PID:9213108; PID
                                                  δÃ
                                                                                                                      рЬ
                                                                                                                                                                            Qy
                                                                                                                                                                                                                                            Ъ
                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                   DЪ
   밁
                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        synaptotagmin o-p65-A - electric ray (Discopyge ommata)
N;Alternate names: synaptic vesicle protein o-p65-A
C;Species: Discopyge ommata
C;Date: 15-Jan-1993 #sequence_revision 15-Jan-1993 #text_change 13-Aug-1999
C;Accession: JH0413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R; Wendland, B.; Miller, K.G.; Schilling, J.; Scheller, R.H. Neuron 6, 993-1007, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VΩ
                                                         333 HAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLV 392
                                                                                                                         269
                                                                                                                                                                                                                                                210
                                                                                                                                                                                                                                                                                                                                                                      151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          107
                                                                                                                                                                                                                                                                                                             217
                                                                                                                                                                                                                                                                                                                                                                                                                                157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        332 YHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         145 KLQYSLDYDFQNNQLLVGTTQAAELPALD-MGGTSDPYVKVFLLPDKKKKFETKVHRKTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                378 FVGYNSTGAELRHWSDMLANPRRPIAQWHTL 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         392 VLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   318 MONGKRLKKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         263 LQSAE--KEEQEK---LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  272 LMNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               204 NPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVDFGHVTEEWRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   156 TLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105 FPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLK----SSTSLT-SEEK-----QEKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            85 FKKKNKKKGKEKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEEEKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
QNGKRLKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKVF 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KKNKKKGKEKGGKNAMTMKDVKEMGKSGKEQALKDEDEDAETGLTTDGKEEEKEDEKLGK 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KTNLKPGSPSDLENA----TPKLFLEGEKESVSPESLKSSTSLTS----EEKQEKLGT 156
                                                                                                                                                                               MNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLY 332
                                                                                                                                                                                                                                            PVFNESFIF-KIPYSELGGKTLVMAVYDFDRFSKHDVIGEAKVPMNTVDFGHVTEEWRDL
                                                                                                                                                                                                                                                                                QGAE--KEEQEK---LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHLM
                                                                                                                                                                                                                                                                                                                                                                   LQFSLDYDFQNNQLIVGIIQAAELPALDVGG-TSDPYVKVFVLPDKKKKYETKVHRKTLN
                                                                                                                                                                                                                                                                                                                                                                                                                            LFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLD 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DPAFDETETFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIEL----SEGKM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         membrane protein; membrane trafficking; synaptic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 579.5; DB 2; Length Pred. No. 9.6e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                            268
                                                                                                                      323
                                                                                                                                                                                                                                                                                                         272
                                                                                                                                                                                                                                                                                                                                                                   209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         317
```

vesicle

۴ŧ

```
A; Molecule type: Protein
A; Molecule type: Protein
A; Molecule type: Protein
A; Residues: 145-168:201-212;214-216;237-244;333-354;357-366;376-388;392-398 <PER2>
A; Residues: 145-168:201-212;214-216;237-244;333-354;357-366;376-388;392-398 <PER2>
A; Note: 99-Asp, 116-Glu, 169-Arg, and 232-Glu were also found
C; Superfamily: synaptotagmin: protein kinase C Cz region homology
C; Keywords: calmodulin binding; glycoprotein; membrane trafficking; synaptic vesic:
F; 152/Domain: intravesicular #status predicted <INV>
F; 83-79/Domain: transmembrane #status predicted <EXT>
F; 80-421/Domain: extravesicular #status predicted <EXT>
F; 135-248/Domain: protein kinase C C2 region homology <KC2A>
F; 136-381/Domain: protein kinase C C2 region homology <KC2B>
F; 24/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                       R; Lou,
                                                                                                             synaptotagmin p65 - chicken
C;Species: Gallus gallus (chicken)
C;Date: 04-Sep-1997 #sequence_revision
C;Accession: I51210
                                                                                                                                                                                                              RESULT
I51210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
S09595
                     A; Title: Coordinate and noncoordinate regulation of synaptic vesicle protein genes durin A; Reference number: IS1210; MUID: 93374184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Perin, M.S.; Fried, V.A.; Mignery, G.A.; Jahn, R.;
Nature 345, 260-263, 1990
A;Tille: Phosphollopid binding by a synaptic vesicle
A;Reference number: S09595; MUID:90238548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 01-Aug-1997
C;Accession: S09595; S20211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                      Dev.
                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 1-421 <PER1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: not compared with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 synaptotagmin P65 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멍
A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: S20211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: S09595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 132; Conserv
                                                                   J. X.; Bixby, J.L.
Biol. 159, 327-337, 1993
                                                                                                                                                                                                                                                                                                        377
                                                                                                                                                                                                                                                                                                                                                      392
                                                                                                                                                                                                                                                                                                                                                                                                    317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                    15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14
                                                                                                                                                                                                                                                                                                                                                   VLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                            YHAKKRISKKKTHYKKCTPNAVFNELFVFDIPCEGLEDISVEFLYLDSERGSRNEVIGQL 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVDFGHVTEEWRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KLQYSLDYDFQNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPEKKKKFETKVHRKTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTL 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                        FVGYNSTGAELRHWSDMLANPRRPIAQWHTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LMNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNL 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIEL ---- SEGKM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FKKKNKKKGKEKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEEEKLG 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLK---SSTSLT-SEEK-----QEKLG 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VGYNSTAAELRHWSDMLANPRRPIAQWHTL 413
                                                                                                                                                                                                                                                                                                                                                                                                 MQNGKRLKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIDKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LQSAE--KEEQEK----LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 577; DB 2;
Pred. No. 1.4e-32;
4; Mismatches 115
                                                                                                                                       04-Sep-1997 #text_change 13-Aug-1999
                                                                                                                                                                                                                                                                                                     407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Jahn, R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein homologous
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Suedhof, T.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 synaptic vesicle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ç
                                                                                                                                                                                                                                                                                                                                                                                                 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         regulator
```

```
R;Cross-references: GB:S64957; NID:9409527; PIDN:AAB28081.1; PID:9409528 C;Superfamily: synaptotagmin; protein kinase C C2 region homology F:138-251/Domain: protein kinase C C2 region homology <KC2> F:269-384/Domain: protein kinase C C2 region homology <KC2B>
                                 δã
                                                                     밁
                                                                                                   δÃ
                                                                                                                                           DЪ
                                                                                                                                                                              Qy
                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Residues: 1-424 <LOU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary; translated from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
390
                                  402
                                                                     330
                                                                                                        342
                                                                                                                                             273
                                                                                                                                                                                282
                                                                                                                                                                                                                     216
                                                                                                                                                                                                                                                          226
                                                                                                                                                                                                                                                                                               157
                                                                                                                                                                                                                                                                                                                                    166
                                                                                                                                                                                                                                                                                                                                                                                                            115
                                                                                                                                                                                                                                                                                                                                                                       97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83
                                                                                                                                                                                                                                                                                                                                                                                                                                             44 NLKKKF----MNELNKIPLPPWALIATAIVAVLLILTCCFCLCKKCL---FKKKNKKKGK 96
                                 GEHWKEICDYPRRQIAKWHVL 422
                                                                                                        KTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTG
                                                                                                                                                                              VRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKK
                                                                                                                                                                                                                     -KVPYSELGGKTLVMAVYDFDRFSKHDIIGEYKVAMNTVDFGHVTEEWRDLQSAE--KEE
                                                                                                                                                                                                                                                        YGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIEL----SEGKMLMNREIIKRN
                                                                                                                                                                                                                                                                                               QNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPDKKKKYETKVHRKTLNPVFNEQFTF
                                                                                                                                                                                                                                                                                                                                ERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTF 225
                                                                                                                                                                                                                                                                                                                                                                       EKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEVEKLGKIQYSLDYDF
                                                                                                                                                                                                                                                                                                                                                                                                      PSDLENATPKLFLEGEKESVSPESLK---SSTSLT-SEEKQ-----EKLGTLFFSLEYNF 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NSKKKFGADDKNEVKNKPAVPKNSLHLD------LEKRDLNGNFPKTNLKPGS 114
                                                                     KTTIKKNTLNPYYNESFSFEVPFEQIQKVQIVVTVLDYDKIGKNDAIGKVFVGYNSTGAE
                                                                                                                                             QEK----LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHLMQNGKRLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26.1%;
37.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71;
410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 1.90
l; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 575;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
.9e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 424;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                341
                                                                                                                                                                                                                                                          281
                                                                                                                                                                                                                                                                                               215
                                                                                                                                                                                                                                                                                                                                                                         156
                                                                                                          401
                                                                                                                                               329
                                                                                                                                                                                                                     272
```

11;

Search completed: Job time: 78 sec December 12, 2001, 10:55:07

Вb

LRHWSDMLANPRRPIAQWHTL

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB seq
        2006
1988
623.5
606.5
600.5
600.5
600.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
594.5
59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match
        990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
990.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
900.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-680-121-2
2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100059 seqs, 36664827 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  December 12, 2001, 10:54:49 ; Search time 13.23 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MAPITTSREEFDEIPTVVGI.....KEICDYPRRQIAKWHVLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
      GenCore version (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapext 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYT1_MOUSE
SYT1_BOVIN
                                                                                                                                                                                                                                                                                                                                           SYT1_CHICK
SY62_DISOM
SYT5_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                      SYT1_HUMAN
SYT1_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SY63_DISOM
SYT1_CAEEL
                      RSG5_HUMAN
RSG3_BOVIN
RSG3_HUMAN
KPCA_BOVIN
                                                                                                                        KPCG_RABIT
KPCG_HUMAN
                                                                                                                                                             YPT7_CAEEL
RP3A_MOUSE
KPCG_BOVIN
                                                                                                                                                                                                                                                             SYT3_MOUSE
RP3A_BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYT2_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SYT2_MOUSE
                                                                                                                                                                                                                        RP3A_RAT
                                                                                                                                                                                                                                                                                                      SYT3_RAT
                                                                                                                                                                                                                                                                                                                      SYT5_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                    SY61_DISOM
        KPCA_RABIT
                                                                                                    KPCG_MOUSE
                                                                                                                                                                                                                                        RP3A_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1177.819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (without
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignments)
Million cell updates/sec
                                          Q28013
Q14644
                                                                               P05129
P05697
O43374
                                                                                                                                        P05128
                                                                                                                                                                             Q06846
Q9y2j0
Q9y7709
P47709
P41885
P47708
                                                                                                                                                                                                                                                                             P24505
P47191
P24506
P47861
O00445
P40748
                                                                                                                                                                                                                                                                                                                                                                                                                                         P34693
P46096
P48018
P21579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P24507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P29101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P46097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P50232 rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P40749 mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                                                                                                                                           homo sapien
rattus norv
discopyge o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  l rattus norv
7 discopyge o
3 caenorhabdi
    homo sapien
bos taurus
oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mus musculu
                                                                               mus musculu
homo sapien
                                                                                                                        oryctolagus
homo sapien
                                                                                                                                                                                                                                                             mus musculu
bos taurus
                                                                                                                                                                                                                                                                                                                                                         gallus gall
discopyge o
                                                                                                                                                                                                                                                                                                                                                                                                                                                           mus musculu
bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  aplysia cal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      drosophila
                                                                                                                                                               bos taurus
                                                                                                                                                                                 mus musculu
                                                                                                                                                                                                      caenorhabdi
                                                                                                                                                                                                                                        homo sapien
                                                                 bos taurus
                                                                                                                                                                                                                      rattus
                                                                                                                                                                                                                                                                                                    rattus
                                                                                                                                                                                                                                                                                                                      homo sapien
                                                                                                                                                                                                                                                                                                                                           rattus
                                                                                                                                                                                                                                                                                                    norv
                                                                                                                                                                                                                                                                                                                                           norv
        InterPro; IPR000008; C2.
InterPro; IPR002149; LRI.
InterPro; IPR001555; Synaptotagmin.
Pfam; PF00168; C2; 2.
PRLNTS; PR00350; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
PROSITE; PS00499; C2_DOMAIN_1; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                           EMBL; U14398; AAA68519.1; -. EMBL; L38247; AAA67327.1; -. HSSP; P21707; 1RSY.
                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY: CONTAINS 2 C2 DOMAINS. SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRAFFICKING AND EXOCYTOSIS.
SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. SYNAPTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                           VESICLES
```

H.R.;

C2

.,		163	4		KPCA RAT	POS696 rattus norv
	ω (5	163		834 1	RSG3_MOUSE	790
(.)		162	4		KPC1_DROME	0
		162	. 4		PK3B_HUMAN	
1.3		161	7.3		KPCA_HUMAN	
		159	N		KPCA_MOUSE	
		159	.2		RSG2_RAT	
		158	.2		KPC1_RABIT	
_		158			KPC2_BOVIN	P05126 bos taurus
4	ω	158			KPC2_RABIT	ory
۸.	4	153			KPC1_RAT	P04410 rattus norv
	15	153	7.0	673 1	KPC2_MOUSE	P04411 mus musculu
					ALIGNMENTS	•
ESULT YT4_R	AT					
. 0		L_RAT	STANDARD;)ARD;	PRT; 425 AA.	
1 ()	P50232;					
	01-OCT-1996		(Rel. 34,			
-3 1-3	01-OCT-1996 20-AUG-2001		(Rel. 34,	l, Last), Last	sequence update) annotation update)	
Z M	SYNAPT	\vdash		н		
מ נ	Rattus	Rattus norvegicus	ı	(Rat).) ; ; ;	
C) (Mammal	Mammalia; Eutheria;	cheria;	Rodentia;	a; Sciuroqnathi; Muridae;	dae; Murinae; Rattus.
×	NCBI_T	NCBI_TaxID=10116;)116;			
υZ	SECTION CE	CE FROM	Z			
a	TISSUE	TISSUE-Brain;				
×	MEDLIN	MEDLINE=95085772;		PubMed=7993622;	193622;	
· >>	Ullric	Ullrich B., Li C.,		Zhang J	J.Z., McMahon H., Anderson	son R.G., Geppert M.,
D ⊅	Suedho	Suedhof T.C.;				•
7 13	"Funct	"Functional properties of "Functional Properties of	propert	ies of r	multiple synaptotagmins	s in brain.";
Z i	[2]	1		(1000)		
יסי:	SEQUENCE	CE FROM N	`. *			
			٠	7	10000	

```
SYTALING SYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 382
Hilbush B.S., Morgan J.I.;

"A third synaptotagmin gene, Syt3, in the mouse,";

"A third synaptotagmin gene, Syt3, in the mouse,";

Proc. Natl. Acad. Sci. U.S.A. 91:8195-8199(1994).

-i- FUNCTION: MAY BE INVOLVED IN CA2+-DEPENDENT EXOCYTOSIS OF SECRETORY VESICLES THROUGH CA2+ AND PHOSPHOLIPID BINDING TO THE DOMAIN OR MAY SERVE AS CA2+ SENSORS IN THE PROCESS OF VESICULAR TRAFFICKING AND EXOCYTOSIS.

-i- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN. SYNAPTIC
                                                                                                                                                                                                                                                                                                              Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                            SYT4, MOUSE STANDARD; PRT; 425 AA P40749; (Rel. 31, Created) 01-FEB-1995 (Rel. 31, Last sequence update) 101-FEB-1995 (Rel. 31, Last sequence update) 20-AUG-2001 (Rel. 40, Last annotation update) SYNAPTOTAGMIN IV (SYTIV).
                                                                                                                                                                                    STRAIN-BALB/C; TISSUE-Brain; MEDLINE-94336712; PubMed-8058779;
                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOUSE
                                                                                                                                                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 MAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYKFVHVLKGV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DIPCESLEEISVEFLVLDSERGSRNEVIGRLVLGATAEGSGGGHWKEICDFPRRQIAKWH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TILSFORFSRODIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VTPKLFPETEKEAVSPESLKSSTSLTSEEKQEKLGTLFLSLEYNFEKKAFVVNIKEAQGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DIYPENLSSKKKFGGDDKSEAKRKAALPNLSLHLDLEKRDLNGNFPKTNPKAGSSSDLEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DIYPENLNSKKKEGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNEPKTNLKPGSPSDLEN 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TVLSFDRFSRDDVIGEVLVPLSGIELSDGKMLMTREIIKRNAKKSSGRGELLVSLCYQST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPVFDETFTFYGVPYPHIQELSLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MAPITTSRVEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRRSAKSNKTPPYKFVHVLKGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     al Similarity 89.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS50004; C2_DOMAIN_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17
17
38
147
155
289
425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16
37
425
297
258
392
47685 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Synapse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 2006;
Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
(POTENTIAL).
(POTENTIAL).
(PROBABLE).
(PROBABLE).
(PROBABLE).
(PROBABLE).
(PROBABLE).
                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VESICULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6AC88E00878936BB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      425 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
1.3e-130;
nes 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                        C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
В
                                                                            Qy
                                                                                                       DЬ
                                                                                                                                Qy
                                                                                                                                                              В
                                                                                                                                                                                     Qy
                                                                                                                                                                                                                   DЬ
                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                        ДЬ
                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                            Вр
                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000008; C2.
InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin.
Pfam; PF00168; C2; 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
PROSITE; PS00499; C2; DOMAIN_1;
PROSITE; PS50004; C2_DOMAIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; U10355; AAA20971.1; -. HSSP; P21707; 1RSY. MGD; MGI:101759; Syt4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
                         421
                                                   361
                                                                              361
                                                                                                        301
                                                                                                                                   301
                                                                                                                                                               241
                                                                                                                                                                                        241
                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                        121 VTPKLFTETEKEANSPESLKSSTSLTSEEKQEKLGTLFLSLEYNFEKKAFVVNIKEAQGL
                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                            TISSUE SPECIFICITY: EXPRESSED IN MANY REGIONS OF THE NERVOUS SYSTEM BUT IS UNDETECTABLE IN STRA NEURAL TISSUES. SIMILARITY: CONTAINS 2 C2 DOMAINS. SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
MLCDG
                          VLCDG
                                                  DIPCEGLEDISVEFLVLDSERGSRNEVIGOLVLGAAABGTGGEHWKEICDVPRRQIAKWH
                                                                                                        TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                     TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                   TILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST
                                                                                                                                                                                                                                 PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETETFYGIPYTQIQELALHF
                                                                                                                                                                                                                                                                                        ATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGL 180
                                                                                                                                                                                                                                                                                                                                           DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN 120
                                                                                                                                                               TVLSFDRFSRDDVIGEVLIPLSGIELSDGKMLMTREIIKRNAKKSSGRGELLVSLCYQST
                                                                                                                                                                                                                    PAMDEQSMTSDPYIKMTILPEKKHRVKTRVLRKTLDPVFGETFTFYGIPYPHIQELSLHF
                                                                                                                                                                                                                                                                                                                            DIYPENLSSQKKFGGDDKSEVKGKTALPNLSLHLDLEKRDLNGNFPKANPKAGSSSDLEN
                                                                                                                                                                                                                                                                                                                                                                                                                                   al Similarity
380; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17
38
38
147
155
289
425 /
                         425
                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Repea
                                                                                                                                                                                                                                                                                                                                                                                                                                            90.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   47630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synapse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                   21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
(YTOPLASMIC (POTENTIAL).
PHOSPHOLIPID BINDING (PROBABLE).
C2 DOMAIN 1.
C2 DOMAIN 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1988; DB 1;
Pred. No. 7.3e-129;
1; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VESICULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C2 DOMAIN 2.
D1900D475C163821 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                     420
                                                                               420
                                                                                                                                                                                        300
                                                                                                          360
                                                                                                                                                               300
                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

```
RESULT 3
SY65_D
AC P1521
AC P21521
A
  Ş
                                            Дb
                                                                                      Ş
                                                                                                                                  Query Match
Best Local S
Matches 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-1991 (R
01-NOV-1995 (R
SYNAPTOTAGMIN
                                                                                                                                                                                                                                                DOMAIN
DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN
SMART; SM00239; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PlyBase; FBqn0004242; syt.
InterPro; IPR000008; C2.
InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila and humans."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Perin M.S., Johnston
Suedhof T.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. MEDLINE=91093190; PubMed=1840599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Tracnea
Pterygota; Neoptera; Endopterygota; Dip
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P21521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (Fruit f
Eukaryota; Metazoa; Arthropoda;
                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                         Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00168; C2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HSSP; P21707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M55048; AAA28925.1; -.
                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Structural and functional conservation
    53
                                              88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -MAY-1991
                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOPRILLA AND NUMBERS. (1991).

3101. Chem. 266:615-622(1991).

5101. Chem. 266:615-622(1991).

FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTION FUNCTION: MAY HAVE A REGULATORY ROLE IN THE ACTIVE ZONE OF CURRING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT SYNAPSE. THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBUNIT: HOMODIMER OR HOMOTRIMER (POSSIBLE).
SUBCELLULAR LOCATION: SYNAPTIC VESICLES IN NEURO
SIMILARITY: CONTAINS 2 C2 DOMAINS.
SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BACKBONE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            в39052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EN
FVHVLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKP 112
                                              PVIKKIEHVGEVVTEVIAERTGLPTWGVVAIIILVFLVVFGIIFFCVRRFLKKRRTK---
                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  non-profit institutions as long as its content and this statement is not removed. Usage hor requires a license agreement in emmi<sup>11</sup> to
                                                                                                                                                                                                                                                                                                                                                                                                                            PS50049; C2_DOMAIN_1; 2.
PS50004; C2_DOMAIN_2; 2.
                                                                                                                                                                                                                                         339
474
                                                                                                                                                                                                                                                                                            108
135
186
206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Rel. 18, Created)
(Rel. 18, Last sequence update)
(Rel. 32, Last annotation update)
                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BMFFSY.
                                                                                                                                                                                                                                                  A,
                                                                                                                                                                                                                                                                                                                                                                                                         Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                430
53278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    P.A.,
                                                                                                                                                              28
34
                                                                                                                                                                                                                                                                                                                                                                                                       Synapse
                                                                                                                                                         .99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Fruit fly)
                                                                                                                                                                                                                                                  WW;
                                                                                                                                    66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oezcelik T.,
                                                                                                                                                                                                                                             VESICULAR.
POTENTIAL.
CYTOPLASMIC.
CYTOPLASMIC.
PHOSPHOLIPID BINDING (PROB
C2 DOMAIN 1.
C2 DOMAIN 2.
C2 DOMAIN 2.
W; BF52A26EAF923F6F CRC64;
                                                                                                                                  Score 623.5;
Pred. No. 1.5e
56; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                      -GIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYK 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tracheata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Diptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of synaptotagmin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jahn
                                                                                                                                                         .5e-35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                 DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hexapoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    THE MEMBRANE INTERACTIONS AT THE ACTIVE ZONE OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brachycera;
                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NEURONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Francke
                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                 (PROBABLE)
                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (p65)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
.
                                                                                                                                  73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DIACYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in
                                                                                                                                  Gaps
                                              144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     way
                                                                                                                                    9;
```

```
RESULT 4
SY65_APLCA
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SY65_APLCA
P41823;
01-NOV-1995
                                                                                                                                                                                                                                                                                                                                  Submitted (NOV-1993) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1995 (Rel.
01-NOV-1995 (Rel.
01-NOV-1995 (Rel.
         PRINTS; PR00399; SYNAPTOTAGMN SMART; SM00239; C2; 2.
PROSITE; PS00499; C2_DOMAIN_1.
                                                                                                                 EMBL; U03125; AAA03567.1;
HSSP; P21707; 1RSY.
                                                                                                                                                      entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                          This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Aplysia californica (California sea hare).
Eukaryota; Metazoa; Mollusca; Gastropoda; Opisthobranchia;
Aplysiidae; Aplysia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SYNAPTOTAGMIN (P65)
                                                                                                                                                                                     use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                              the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                -!- SUBCELLULÀR LOCATION: SYNAPTIC VESICLES AND VESIC
STRUCTURES.
-!- SIMILARITY: CONTAINS 2 C2 DOMAINS.
-!- SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Ganglion;
                                                 PRINTS; PR00360;
                                                                Pfam; PF00168; C2;
                                                                                                                                                                                                                              between
                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=6500
                                                                             InterPro;
                                                                                           InterPro;
                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  145
                                                                                                                                                                                                                                                                                                                        SYNAPSE. IT BINDS ACIDIC PHOSE REQUIRES THE PRESENCE OF BOTH BACKBONE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ASPRRPIAQWHTLKD 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SWISS-PROT entry is copyright. It is produced through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DYPRRQIAKWHVLCD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LNPYYNESFSFEVPFEQMQKICLVVTVVDYDRIGTSEPIGRCILGCMGTGTELRHWSDML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIAIMQNGKRLKKKKTSVKKCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AMNKTLVFAIFDFDRFSKHDQIGEVKVPLCTIDLAQ-TIEEWRDLV--SVEGEGGQEKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGR----G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSPSDLENATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVV
                                                                                                                                                                                                                              the Swiss Institute of
                                                             IPR002149; LRI.
IPR001565; Synaptotagmin
0168; C2; 2.
                                                                                                        IPR000008; C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                     C2DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           32, Created)
32, Last sequence up
32, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --DGKGKKG--
                                                                                                                                                                                                   institutions as long
                                                                                                                                                                                                                                                                                                           SYNAPTIC VESICLES AND VESICLE-LIKE
                                                                                                                                                                                                                            Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DKQSEQKLGRLNFKLEYDFNSNSLAV
                                                                                                                                                                                                  There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                     Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 - VDMKSVQLLGSAYKEKVQP
                                                                                                                                                                                                                              and the
                                                                                                                                                                                      bу
                                                                                                                                                                                                             restrictions
                                                                                                                                                                                        and
                                                                                                                                                                                                                              EMBL
                                                                                                                                                                                                                                          þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Anaspidea;
                                                                                                                                                                                        for
                                                                                                                                                                                                                                        collaboration
                                                                                                                                                                                                                              outstation
                                                                                                                                                                                        commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      270
                                                                                                                                                                                                              9
                                                                                                                                                                                                    no
                                                                                                                                                                                                   way
```

PS00499; C2_DOMAIN_1; PS50004; C2_DOMAIN_2;

 \sim \sim

```
RESULT
SYT2_MC
1DT 20
DT 01
DT 01
DT 02
DT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFFIFER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SYT2_MOUSE STANDARD;
P46097;
01-NOV-1995 (Rel. 32, Creat
01-NOV-1995 (Rel. 32, Last
20-AUG-2001 (Rel. 40, Last
SYMAPTOTAGMIN II (SYTII).
SEQUENCE FAVOR .....
Adachi R., Teich A.H., Nigam R.;
Adachi R., Teich A.H., Nigam R.;
Adachi R., Teich A.H., Nigam R.;
"Genomic structure of the murine Syt2 gene.";
"Genomic structure of the EMBL/GenBank/DBU databases.

SUBMILTER TO ATTENDED TO THE MEMBRANE INTERACTIONS
-i- FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS
DURING TRAFFICKING OF SYNAPPIC VESICLES AT THE ACTIVE ZONE OF THE
SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFIC PHOSPHOLIPID PHOSPHOLIPI
                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE-95050743; PubMed-7961887;
MEDLINE-95050743; PubMed-7961887;
Fukuda M., Aruga J., Niinobe M., Aimoto S.,
Fukuda M., Aimoto M.,
Fukuda M., Aimoto M., Aimoto M.,
Fukuda M., A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SYT2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIK---RNVRKSSGRGELLISLCYQSTTN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTILSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWHVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MSGTSDPYVKVYLLPDKKKKYETKVHRKTLNPVFNESFTF-KVPYAEVGSKILTFAVYDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EIENLPIWAIVLIIAGSLLFLVCCVYCVCRRSCRKRKKKEGKKG-----LKGA----V 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EFDEIPT-VVGIFSAFGLVFTVSLFAWIC---CQRKSSKSNKTPPYKFVHVLKGVDIYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PFEQIQKVTLIITVVDYDRIGTSEPIGRCVLGCNSSGTELRHWSDMLANPRRPIAQWHTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DRFSKHDQIGQVQVPLNSIDL--GRVVEDWKDLQSPDTESEKENKLGDICFSLRYVPTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----ESTKS-----EVKLGKLQFSLDYDFQKGELSVNVIQAADLPGMD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DLKSVQLLG----MEDNEDA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          al Similarity 36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1
67
93
145
167
298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Repeat;
1 67
57 92
33 426
33 33
15 393
57 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27.6%;
36.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synapse; Glycoprotein.
VESICULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Œ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 606.5;
Pred. No. 1.9e
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.

(POTENTIAL).

CYTOPLASMIC (POTENTIAL).

PHOSPHOLIPID BINDING (PROBABLE).

C2 DOWAIN 1.

C2 DOWAIN 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2576B853DEEDEA85 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1
1.9e-34;
126;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mikoshiba K.;
to C2B domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 426;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13;
                                                                                                                            Вb
                                                                                                                                                                                           γ
                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                        Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          $\frac{1}{2} \frac{1}{2} \frac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                 345
                                                                                                                                                                                                       359
                                                                                                                                                                                                                                                                                                                                                 299
                                                                                                                                                                                                                                                                                                                                                                                                                        230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131
                                                                                                                                                                                                                                                                          285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10
                             HVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SFEIPFEQIOKVOVVVTVLDYDKLGKNEAIGKIFVGSNATGTELRHWSDMLANPRRPIAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LSFDRFSRDDIIGEVLIPLSGIEL----SEGKMLMNREIIKRNVRKSSGRGELLISLCYQ
                                                                                                                                                                                                       VFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAK 418
                                                                                                                                                                                                                                                                                                                                                                                                                        YDFDRFSKHDIIGEVKVPMNTVDLGQPIEEWRDLQGGE--KEEPEK---LGDICTSLRYV
                                                                                                                                                                                                                                                                              PTAGKLTVCILEAKNLKKMDVGGLSDPYVKIHLMQNGKRLKKKKTTVKKKTLNPYFNESF
                                                                                                                                                                                                                                                                                                                                             STINILIVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
61
88
136
156
287
```

```
HSSP; P21/0/; INSI.

MGD; MGI:9966: Syt2.

InterPro; IPR000008; C2.

InterPro; IPR002149; LRI.

InterPro; IPR00149; LRI.

InterPro; IPR001565; Synaptotagmin.

Pfam; PF00168; C2; 2.

PFINTS; PR00360; C2DOMAIN.

PRINTS; PR00399; SYNAPTOTAGMN.

R SMART; SM00239; CZ; 2.

R PROSITE; PS00049; C2_DOMAIN_1; 2.

R PROSITE; PS0004; C2_DOMAIN_2; 2.

R PROSITE; PS0004; C2_DOMAIN_2; 2.

PROSITE; PS0004; C2_DOMAIN_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a c between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fc entities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; D37793; BAA07041.1; -.
EMBL; AF257303; AAF68987.1;
HSSP; P21707; IRSY.
MGD; MGI:99666; Syt2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBUNIT: HOMOTETRAMER (PROBABLE)
SUBCELLULAR LOCATION: SYNAPTIC VESICLES AND CHROMAFFIN GRANULES.
DOMAIN: THE FIRST C2 DOMAIN MEDIATES CA(2+)-DEPENDENT PHOSPHOLIPID BINDING.
SIMILARITY: CONTAINS 2 C2 DOMAINS.
SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                          PKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPA
                                                                                                                                                                                                                         EFDEIP----TVVGIFSAFGLVFTVSLFA---WICCQRKSSKSNKTPPYKFVHVLKGVDI 62
----EGEGE-----EEKEPENLGKLQFSLDYDFQANQLTVGVLQAAELPA
                                                                                       -KNAMNMKDMKGGQDDDDA------
                                                                                                                                  YPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENAT 122
                                                                                                                                                                                 EINKIPLPPWALIAMAVVAGLLLLTCCFCICKKCCCKKKKNKKEKG------KGM--
                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                      Α,
                                                                                                                                                                                                                                                                                                                                                                      60
422
422
382
245
378
378
47262
                                                                                                                                                                                                                                                                                              27.5%;
35.6%;
                                                                                                                                                                                                                                                                                                                                                                                      WW.
                                                                                                                                                                                                                                                                         63;
                                                                                                                                                                                                                                                                      Score 604.5;
Pred. No. 2.6e
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                PHOSPHOLIPID I
C2 DOMAIN 1.
C2 DOMAIN 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
CYTOPLASMIC (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                         N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VESICULAR
                                                                                                                                                                                                                                                                                                                                                                                   -LINKED (GLCNAC. ..) (POTENTIAL)
B4BD13FF70E0481B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL).
                                                                                                                                                                                                                                                                                              DB 1;
                                                                                          -ETGLTEG------
                                                                                                                                                                                                                                                                                                                 Length 422;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              restrictions
                                                                                                                                                                                                                                                                         83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      outstation
                                                                                                                                                                                                                                                                      Gaps
  171
                                             182
                                                                                                                                                                                 105
                                                                                                                                                                                                                                                                         12;
```

284

298

242

밁

405

TSHM

```
Query Match
Best Local
 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SYT2_RAT
P29101;
01-DEC-1992
                                                                                        DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                             This
                                                       SEQUENCE
                                                                                                                                                                                                                 InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin.
Pfam; PF00168; C2; 2.
                                                                                                                                                                                                                                                                                                                                   modified
                                                                                                                                                                                                                                                                                                                                             use
                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     synaptotagmin."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE=91310620; PubMed=1856191;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20-AUG-2001 (Rel. SYNAPTOTAGMIN II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-DEC-1992 (Rel. 20-AUG-2001 (Rel.
                                                                  CARBOHYD
                                                                                                               DOMAIN
                                                                                                                           TRANSMEM
                                                                                                                                                Transmembrane;
                                                                                                                                                                                                                                                                                   EMBL; M64488; AAA63502.1;
                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                       entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Geppert M., Archer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rattus norvegicus
                                                                               DOMAIN
                                                                                                                                      DOMAIN
                                                                                                                                                                                 SMART; SM00239; C2;
                                                                                                                                                                                                                                                               HSSP; P21707;
                                                                                                                                                                                                                                                   InterPro; IPR000008; C2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synaptotagmin II. A novel differentially
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Biol.
                                                                                                                                                                                                                                                                                                                      European Bioinformatics and the E by non-profit institutions as long as its content ified and this statement is not removed. Usage by an ities requires a licence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIOI. Chem. 266:13548-13552(1991).

FUNCTION: MAY HAVE A RECULATORY ROLE IN THE MEMBRANE INTERACTIONS DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL
                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: CONTAINS 2 C2 DOMAINS SIMILARITY: BELONGS TO THE SYNAPTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUBUNIT: HOMOTETRAMER (PROBABLE).
SUBCELLULAR LOCATION: SYNAPTIC VESICLES AND CHROMAFFIN GRANULES
TISSUE SPECIFICITY: PREDOMINANTLY EXPRESSED IN PHYLOGENETICALLY
OLDER BRAIN REGIONS SUCH AS THE SPINAL CORD, BRAIN STEM AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                             OLDER BRAIN REGIONS CEREBELLUM.
                                                                                                                                                                                                                                                                                                                                                                                                                        BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN: THE FIRST C2 DOMAIN MEDIATES CA(2+)-DEPENDENT PHOSPHOLIPID
                                                                                                                                                                                                                                                                          A39454; BMRT2Y.
                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EN
 151;
                                                                                                                                                                                            PR00360; C2DOMAIN.
PR00399; SYNAPTOTAGMN
           Similarity
                                                                                                                                                           PS00499; C2_DOMAIN_1; 2.
PS50004; C2_DOMAIN_2; 2.
                                                      1
61
88
136
156
287
287
32
 Conservative
                                                                                                                                                                                                                                                               LKCK
                                                        AA;
                                                                                                                                                Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SYTII).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24,
24,
40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Œ
                                                                    60
87
422
382
245
378
                                                        47209
          27.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .T. III,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                Synapse; Glycoprotein
                                                        WW.
 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequence
         Score 603.5;
Pred. No. 3e-
                                                      Suedhof T.C.;
                                                                                                               CYTOPLASMIC (POTENTIAL).
                                                                                                   PHOSPHOLIPID BINDING
                                                                                                                        POTENTIAL
                                                                                                                                   VESICULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                 SYNAPTOTAGMIN FAMILY.
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         422
                                                                                                                                                                                                                                                                                                                   moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
           3e-34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  distributed
                     DB 1;
127;
                     Length
                                                                                                  (PROBABLE).
Indels
                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  form
                                                                                                                                                                                                                                                                                                                                                       restrictions
                      422;
                                                                                                                                                                                                                                                                                                                                                                  EMBL
 83;
                                                                                                                                                                                                                                                                                                                                                                             ø
                                                                                                                                                                                                                                                                                                                                                                   collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus
                                                                                                                                                                                                                                                                                                                                                                  outstation
                                                                                                                                                                                                                                                                                                                                           'n
Gaps
                                                                                                                                                                                                                                                                                                                                           no
                                                                                                                                                                                                                                                                                                                                                       9
12;
                                                                                                                                                                                                                                                                                                                                          way
```

```
RESULT 7
SY63_DISOM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAR-1992
01-MAR-1992
01-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SY63_DISOM
P24507;
                                                                                                                           This
                                                                                                                                                                                                                                                                         MEDLINE=91273991; PubMed=2054189; Wendland B., Miller K.G., Schilling "Differential expression of the p65 Neuron 6:993-1007(1991).
-i- FUNCTION: MAY HAVE A REGULATORY
                                                                                                                                                                                                                                                                                                                                                                                                                        Discopyge ommata (Electric ray).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Chondrichthyes;
                                                                   use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                           Elasmobranchii; Squalea; Hypnosqualea; Pristiorajea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        P65-C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SYNAPTOTAGMIN
          EMBL; M64277;
                                       or send an
                                                   entities requires a
                                                                                                 the European Bioinformatics Institute.
                                                                                                               between
                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=7785
                                                                                                                                                                                                                                                                                                                                                                                             Torpediniformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10
                                                                                                                                                     SUBCELLULAR LOCATION: SYNAPTIC VESICLES IN NEURO SIMILARITY: CONTAINS 2 C2 DOMAINS. SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                                                                                                                                                      SUBUNIT: HOMODIMER OR HOMOTRIMER
                                                                                                                                                                                                                                FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS DURING TRAFFICKING OF SYNAPTIC VESTCLES AT THE ACTIVE ZONE OF THE SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL
                                                                                                            SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SFEIPFEQIQKVQVVVTVLDYDKLGKNEAIGKIFVGSNATGTELRHWSDMLANPRRPIAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STINTLIVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LSFDRFSRDDIIGEVLIPLSGIEL----SEGKMLMNREIIKRNVRKSSGRGELLISLCYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TSHW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -KNAMNMKDMKGGQDDDDA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENAT 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EINKIPLPPWALIAMAVVAGLLLLTCCFCICKKCCCKKKKNKKEKG----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EFDEIP----TVVGIFSAFGLVFTVSLFA---WICCQRKSSKSNKTPPYKFVHVLKGVDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PTAGKLTVCILEAKNLKKMDVGGLSDPYVKIHLMQNGKRLKKKKTTVKKKTLNPYFNESF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YDFDRFSKHDIIGEVKVPMNTVDLGQPIEEWRDLQGGE--KEEPEK---LGDICTSLRYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LD-MGGTSDPYVKVFLLPDKKKKYETKVHRKTLNPAFNETFTF-KVPYQELGGKTLVMAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ----EGEGE---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  408
                                       equires a license agreement (S email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Rel.) (Rel.) (Rel.) (Rel.) (Rel.)
            AAA49229.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SYNAPTIC VESICLE PROTEIN 0-P65-C).
                                                                                                                                                                                                                                                                                                                                                                                             Narcinoidei; Narcinidae; Discopyge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21, Created)
21, Last sequence update)
32, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----EEKEPENLGKLQFSLDYDFQANQLTVGVLQAAELPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                    J., S
                                                                                                                                                                                                      (POSSIBLE
                                                   noved. Usage by and for (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                 There are no
                                                                                                                                                                                                                                                                                                         Scheller R.H.;
e family.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                                                                                                                                       family
                                                                                  as its content
                                                                                                                                                                                     IN NEURONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -ETGLTEG-----
                                                                                                                                                                                                                                                                                                                                                                                                              Batoidea;
                                                                                                 restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----KGM--
                                                                                                               gh a collaboration -
                                                                      for
                                                      .ch/announce/
                                                                                  1n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              171
                                                                                  no
                                                                                  way
```

```
õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DR FTT FTT SQ
                                                                                                        1_CAEEL STAND
SYT1_CAEEL STAND
SYT1_CAEEL STAND
P34693;
01-FEB-1994 (Rel. 201-FEB-1994 (Rel. 201-FEB-1994 (Rel. 301-FEB-1994 (Rel. 301-FEB-1995 (R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
SYNAPTOTAGMIN I.
SNT-1 OR F31E8.2.
Caenorhabditis elegans.
Caenorhabditis elegans.
Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001565; Synaptota
Pfam; PF00168; C2; 2.
PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00499; C2_DOMAIN_1; 2.
PROSITE; PS50004; C2_DOMAIN_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
                                                                                                                                                                                                                                                                                                                                                                                        491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52 KFVH------VLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLN 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6 TSREEFDEIPTVVGIFSAF-GLVFT-VSLF-AWICC------QRKSSKSNKTPPY 51
                                                                                                                                                                                                                                                                                                                                                                                        ANPRKPIEQWHQLIE 505
                                                                                                                                                                                                                                                                                                                                                                                                                                        DYPRRQIAKWHVLCD 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LNPVYNEALVFDIPNENMEHVNVIIAVMDYDCIGHNEVIGMCRVGNATDGPGREHWNEML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEIC 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EINFSLCYLPTAGRLTITIIKATNLKAMDLTGFSDPYVKASLICDERRLKKRKTSIKKNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ELQNRKLHFSVYDFDRFSRHDLIGQVVLDNLLEFSDFSEDTTIW-RDILEATSEKAD-LG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QIQELALHFTILSFDRFSRDDIIGEVLIP--LSGIELSEGKMLMNREIIKRNVRKSSGRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYT 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRHIETDISVSLLSVIVTFCGIVLLGVSLFVSWKLCWIPWRDKGLNPQRRDSQHH---PH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VKILKALDLPAKDANGF-SDPYVKIYLLPDRKKKFQTKVHRKTLNPIFNETFQF-NVPFN 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SPEFGTQADEKVEQVTSIGQIKPELYKQRSIDTEAKKHQKVNCGRINFMLRYTYTTEQLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TPKLFLEGEKE-----SVSPESLKSSTSLTSEEKQEKL--GTLFFSLEYNFERKAFV 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -SYPESGIKLSQTSPDIPVDTSSGSKENNIPNAHSQQQVSAPPPATRFNSLPRPIPQQLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR002149; LRI.
    IPR001565; Synaptotagmin.
0168; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000008; C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Repeat; Synapse; Multigene family
                                                                                                                                    28, Created)
28, Last sequ
34, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61300 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27.0%;
                                                                                                                                    sequence update) annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL. (POTENTIAL). CYTOPLASMIC (POTENTIAL). PHOSPHOLIPID BINDING (PROBABLE). C2 DOMAIN 1. C2 DOMAIN 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 594.5; DB 1; Pred. No. 1.7e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VESICULAR (POTENTIAL).
                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2792F910CFBCE682 CRC64;
                                                                                                                                                                                                                                                441 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels 111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 537;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19;
```

```
InterPro; IPho.
InterPro; IPho.
InterPro; IPho.
InterPro; IPRO015b.,
InterPro; IPRO015b.,
InterPro; IPRO015b.,
Pfam; pro0148; C2; 2.
Pfam; pro0148; C2; 2.
RRINTS; PR00399; SYNAPTOTAGMN.
DR SMART; SM00239; C2_DOMAIN_1; 2.
DR PROSITE; PS90049; C2_DOMAIN_1; 2.
DR PROSITE; PS90049; C2_DOMAIN_1; 2.
DR PROSITE; PS90004; C2_DOMAIN_1; 2.
DR PROSITE; PS900049; C2_DOMAIN_1; 2.
DR PROSITE; PS900049; C2_DOMAIN_1
70 96
POTEMPTIAL.
71 441
C2T DOMAIN 1.
C2 DOMAIN 2.
C2 DOMAIN 2.
F8D174337EB472DB CRC64;
Leng
                                  QΥ
    Ъ
                                                                       Вþ
                                                                                                                                                                                                                                    Matches
                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was modified and this statement is not removed. Usage by and for commercize entitles requires a license agreement (See http://www.isb-sib.ch/announce or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRUCTURES.

STRUCTURES.

1: TISSUE SPECIFICITY: LOCALIZED TO REGIONS KNOWN TO BE RICH IN SYNAPSES AND APPEARS TO BE ASSOCIATED WITH SYNAPTIC VESICLES. ALSO FOUND IN SOME NONNEURONAL SECRETORY STRUCTURES.

1: DISEASE: MUTANTS EXHIBIT SEVERE BEHAVIORAL ABNORMALITIES THAT ARE CHARACTERISTIC OF DEFICIENCIES IN SYNAPTIC FUNCTION, INCLUDING SEVERE LOCOMOTION, FEEDING, AND DEFECATION DEFECTS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBMILITED (ARR-1996) to the EMBL/GenBank/DDBJ databases.
-I- FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL BACKBONE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; L15302; AAA28145.1; -.
EMBL; U55856; AAA98023.1; -.
PIR; A40707; A40707.
HSSP; P21707; 1RSY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nonet M.L., Grundahl K., Meyer B.J.,
"Synaptic function is impaired but no
mutants lacking synaptotagmin.";
Cell 73:1291-1305(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-BRISTOL N2;
MEDLINE-93313960; PubMed-8391930;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WormPep; F31E8.2; CE02711.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=6239;
[1]
  142 DAM-EQNEKEQ-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -- SIMILARITY: CONTAINS 2 C2 DOWAINS.
-- SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                       97
                                                                                                     70 KKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPK-----TNLKPGSPSDLENAT 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUBCELLULAR LOCATION: SYNAPTIC VESICLES AND VESICLE-LIKE
                                    PKLFLEGEKESVSPESLKSSTSLTSEEKQE-KLGTLFFSLEYNFERKAFVVNIKEARGLP
                                                                       RKLFGKKRHGE-KNK------KGGLKGFFGKGQDVVDGKNIQ-GMAQDLEELG
                                                                                                                                        al Similarity
148; Conserv
                                                                                                                                        Conservative
                                                                                                                                                        27.0%;
                                                                                                                                        57; Mismatches
                                                                                                                                                      Score 594;
Pred. No. 1
-AEEKEEVKLGRIQYKLDYDFQQGQLTVTVIQAEDLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      not eliminated in C. elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (See http://www.isb-sib.ch/announce/
                                                                                                                                                          DB 1;
..4e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         J.B.;
                                                                                                                                                                           Length 441;
                                                                                                                                        Indels
                                                                                                                                        52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           commercia
                                    181
                                                                       141
                                                                                                                                          14;
```

```
STATUTE STATE OF STAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P46096;
01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
20-AUG-2001 (Rel. 40, Last annotation update)
SYNAPTOTAGMIN I (SYTI) (P65).
InterPro; IPR000008; C2.
InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin.
Pfam; PF00168; C2; 2.
PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SYT1_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOUSE
                                                                                                                                                                                                                        EMBL; D37792;
HSSP; P21707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fukuda M., Aruga J., Niinobe M., Aimoto S., "Inositol-1,3,4,5-tetrakisphosphate binding
                                                                                                                                                                                          MGD; MGI:99667; Syt1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J. Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=95050743; PubMed=7961887;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IP4BP/synaptotagmin II.";
J. Biol. Chem. 269:29206-29211(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBUNIT: HOMOTETRAMER (PROBABLE).
SUBCELLULAR LOCATION: SYNAPTIC VESICLES AND CHROMAFFIN GRANULES
DOMAIN: THE FIRST C2 DOMAIN MEDIATES CA(2+)-DEPENDENT PHOSPHOLII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: MAY HAVE A REGULÁTORY ROLE IN THE MEMBRANE INTERACTIONS DURING TRAFICING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL BACKBONE. A CA2+-DEPENDENT INTERACTION BETWEEN SYNAPTOTAGMIN AND PUTATIVE RECEPTORS FOR ACTIVATED PROTEIN KINASE CHAS ALSO BEEN REPORTED. IT CAN BIND TO AT LEAST THREE ADDITIONAL PROTEINS IN A CA2+-INDEPENDENT MANNER. THESE ARE NEUREXINS, SYNTAXIN AND AP2. GIBHINIT. HOWOTETSAMED (DECEMBER)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BINDING.
SIMILARITY: CONTAINS 2 C2 DOMAINS.
SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGE--HWKEICDYPRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIAQWHTL 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SFSFEVPFEQIQKVSLMITVMDYDKLGSNDAIGRCLLG--CNGTGAELRHWMDMLASPRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IYDFDRFSKHDQIGQVLIPLGKIDL--GAVIEEWKDIAPPPDDKEAEKS--LGDICFSLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREII-----KRNVRKSSGRGELLISLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GMD-MSGTSDPYVKLYLLPEKKKKVETKVHRKTLNPVFNETFIF-KVAFNEITAKTLVFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIVLMQGGKRLKKKKTSIKKCTLNPYYNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNE
                                                                                                                                                                                                                                                           BAA07040.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mikoshiba
to C2B dom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              domain of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Χ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PHOSPHOLIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     296
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DR DR FT FT ST SQ
 RESULT 10
SYT1_BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 132
                                                                                                                                                                                                                                                                                                                                01-FEB-1996
01-FEB-1996
20-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                          SYT1_BOVIN P48018;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
                                                                                 Davletov B., Sontag J.M., Hata Y., Petrenko A.G., Fykse E.M., Jahn R., Suedhof T.C.;
Jahn R., Suedhof T.C.;
"Phosphorylation of synaptotagmin I by casein kinase II.";
J. Biol. Chem. 268:6816-6822(1993).
-!- FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE
                                                                                                                                                                                                                                                                                                                01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence up
20-AUG-2001 (Rel. 40, Last annotation
SYNAPTOTAGMIN I (SYTI) (P65).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SMART; SN00239; C2; 2.
PROSITE; PS00499; C2_DOMAIN_1; 2.
PROSITE; PS50004; C2_DOMAIN_2; 2.
Transmembrane; Repeat; Synapse; Glycoprotein.
                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                       SYT1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                       MEDLINE=93203288; PubMed=8454654;
                                                                                                                                                                                    TISSUE-Brain;
                                                                                                                                                                                                                                              Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                       Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                               NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     156
                                                                                                                                                                                                                                                                                                                                                                                                                                                              377 FVGYNSTGAELRHWSDMLANPRRPIAQWHTL 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            105 FPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLK---SSTSLT-SEEK-----QEKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84
SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL BACKBONE. A CA2+-DEPENDENT INTERACTION BETWEEN SYNAPTOTAGMIN AND PUTATIVE RECEPTORS FOR ACTIVATED PROTEIN KINASE C HAS ALSO BEEN REPORTED. IT CAN BIND TO AT LEAST THREE ADDITIONAL PROTEINS IN A CA2+-INDEPENDENT MANNER. THESE ARE NEUREXINS, SYNTAXIN AND AP2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KLQYSLDYDFQNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPDKKKKFETKVHRKTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LQSAE--KEEQEK---LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FKKKNKKKGKEKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEEEKLG 143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MQNGKRLKKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LMNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVDFGHVTEEWRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         135
135
135
156
286
                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       79
421
381
244
377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           24
47418
                                                                                                                                                     J.M., Hata
                                                                                                                                                                                                                                                           Cetartiodactyla;
                                                                                                                                                                                                                                                                          Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PHOSPHOLIPID BINDING (PROBABLE).
C2 DOMAIN 1.
C2 DOMAIN 2.
C2 DOMAIN 2.
N-LINKED (GLCNAC...) (BY SIMILARITY).
7FDEFF37170BD169 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL.
CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VESICULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                        Y., Petrenko A.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    581; DB 1
No. 1e-32;
                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                              Ruminantia;
                                                                                                                                                                                                                                                                                                                                                                                         422
                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 421;
                                                                                                                                                                                                                                                              Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                         Fykse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     215
```

```
RESULT
SYT1_HU
ID SY
AC PI
DT 01
DT 01
DT 20
                                                                                                                                      밁
                                                                                                                                                            Qy
                                                                                                                                                                                ДЬ
                                                                                                                                                                                                       ρy
                                                                                                                                                                                                                            Вр
                                                                                                                                                                                                                                                  ρ
                                                                                                                                                                                                                                                                         Вb
                                                                                                                                                                                                                                                                                              QY
                                                                                                  밁
                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 26.4
Best Local Similarity 39.5
Matches 132; Conservative
ULT 11
1_HUMAN
SYT1_HUMAN
P21579;
01-MAY-1991
01-MAY-1991
20-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTACMN.
SMARR; SM00239; C2; 2.
PROSTTE; PS00499; C2_DOMAIN_2;
PROSTTE; PS50004; C2_DOMAIN_2;
Transmembrane; Repeat; Synapse;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions are long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000008; C2.
InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin
Pfam; PF00168; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; L05922; AAA87360.1; -. HSSP; P21707; 1RSY. InterPro; IPR000008; C2.
                                                                                                  378
                                                                                                                                                                                                                                                                             145
                                                                                                                                                                                      263
                                                                                                                                                                                                                                                                                                 156
                                                                                                                                                                                                                                                                                                                                 105 FPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLK---SSTSLT-SEEK-----QEKLG 155
                                                                                                                                                                                                                                 204
                                                                                                                                                                                                                                                                                                                       85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY: CONTAINS 2 C2 DOMAINS.
SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBUNIT: HOMOTETRAMER (PROBABLE),
SUBCELLULAR LOCATION: SYNAPTIC VESICLES AND CHROMAFFIN GRANULES.
DOMAIN: THE FIRST C2 DOMAIN MEDIATES CA(2+)-DEPENDENT PHOSPHOLIFID
BINDING.
                                                                                                                                                                                                                                                                                        TLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTL
                                                                                                  FVGYNSTGAELRHWSDMLANPRRPIAQWHTL
                                                                                                                     VLGAAAEGTGGEHWKEICDYPRRQIAKWHVL
                                                                                                                                                          YHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQL
                                                                                                                                                                                      DPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIEL----SEGKM
                                                                                                                                                                                                                                                                           KLQYSLDYDFQNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPDKKKKFETKVHRKTL
                                                                                                                                                                                                                                                                                                                     FKKKNKKKGKEKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEEEKLG
                                                                                                                                          MQNGKRLKKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKV
                                                                                                                                                                                                                                NPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVDFGHVTEEWRD
                                                                                                                                                                                                                                                                                                                                                                                                                   1
54
81
136
157
287
287
25
 (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                       e; Repeat; Synapse; Glycoprotein.

1 53 VESICULAR.
54 80 POTENTIAL.
81 422 CYTOPLASMIC.
136 382 PHOSPHOLIPID BINDII
136 382 C2 DOMAIN 1.
287 378 C2 DOMAIN 2.
                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                            STANDARD;
 18, Created)
18, Last sequence update)
40, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.

CYTOPLASMIC.

BINDING (PROBABLE).

CYTOPLASMIC.

BINDING (PROBABLE).

C2 DOMAIN 1.

C2 DOMAIN 1.

C3 DOMAIN 2.

C4 DOMAIN 2.

C5 N-LINKED (GLCNAC. . ) (POTENTIAL)

A7623 MW; C158C34DAAE456EA CRC64;
                                                                                                                                                                                                                                                                                                                                                                         26.48;
                                                                                                                                                                                                                                                                                                                                                                65;
                                                                                                                                                                                                                                                                                                                                                              Score 581; DB 1; Length 422;
Pred. No. 1e-32;
5; Mismatches 114; Indels
                                            PRT;
                                                                                                                       422
                                                                                                  408
                                            422
 update)
                                            A
                                                                                                                                                                                                                                                                                                                                                                20;
                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                  391
                                                                                                                                                                                                                                 262
                                                                                                                                                                                                                                                      271
                                                                                                                                                                                                                                                                           203
                                                                                                                                                                                                                                                                                               215
                                                                                                                                                                                                                                                                                                                    144
                                                                                                                                                                                                                                                                                                                                                                8
            В
                             Ωy
                                                   Вb
                                                                       Qy
                                                                                                                                                      Query Match
Best Local
Matches 13
                                                                                                                                                                                                                                                   InterPro; IPRO00008; C2.
InterPro; IPRO02149; LRI.
InterPro; IPR002149; LRI.
InterPro; IPR002165; Synaptotagmin.
Pfam; PF00168; C2; 2.
PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2.
PROSITE; PS00499; C2.
PROSITE; PS00499; C2.
PROSITE; PS00494; C2.
PROSITE; PS50004; C2.
PROSITE; PS50004; C2.
                                                                                                                                                     DOMAIN
DOMAIN
DOMAIN
DOMAIN
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                   EMBL; M55047; AAA60609.1; -. PIR; A39052; BMHUIY. HSSP; P21707; IRSY. MIM; 185605; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SYNAPTOTAGMIN I (SYTI) (P65).
SYT1 OR SYT.
HOMO sapiens (Human).
                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                           Transmembrane;
          145 KLQYSLDYDFQNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPDKKKKFETKVHRKTL
                      156 TLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTL 215
                                                      85
                                                                                                           Similarity
                                                                                                                                                                           54
81
136
157
287
                                                                                                 Conservative
                                                                                                                                            26.4%;
                                                                                                 65;
                                                                                               Score 581; DB 1
Pred. No. 1e-32;
5; Mismatches 1
```

```
RA Suedhof T.C.;

RA Suedhof T.C.;

RY Structural and functional conservation of synaptotagmin (p65) in RT Structural and humans.";

RT Structural and humans.";

RT J. Biol. Chem. 266:615-622(1991).

CC DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE CC DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE CC SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL BACKBONE. A CA2+-DEPENDENT INVERACTION BETWREN SYNAPTOTAGMIN AND CC PUTATIVE RECEPTORS FOR ACTIVATED RROTEIN KINASE C HAS ALSO BEEN REPORTED. IT CAN BIND TO AT LEAST THREE ADDITIONAL PROTEINS IN A CA2+-INDEPENDENT MANUER. THESE ARE NEUREXINS. SYNTAXIN AND AP2.

CC C. -- SUBNIT: HOMOTETRAMER (PROBABLE).

CC -- SUBCELULAR LOCATION: SYNAPTIC VESICLES AND CHROMAFE'N GRANULES.

CC -- SUBCELULAR LOCATION: SYNAPTIC VESICLES AND CHROMAFE'N GRANULES.

CC -- SUBCELULAR LOCATION: SYNAPTIC VESICLES AND CHROMAFE'N GRANULES.

CC -- SUBCELULAR CONTAINS. 2 C2 DOMAIN MEDIATES CA(2+)-DEPENDENT PHOSPHOLIPID CC BINDING.

CI SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. NCBI_TaxID=9606;
                                       105 FPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLK----SSTSLT-SEEK-----QEKLG
FKKKNKKKGKEKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEEEKLG
                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                               Gaps
                                                                          155
144
                                                                                                                                                    8;
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     L_RAT
                   between
the Euro
                                                This
                                                                                                                                                                                                                                                                                              synaptotagmin I: does Ca2+ induce a conformational change?";
Biochemistry 37:16106-16115(1998).

-i- FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS
DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perin M.S., Fried V.A., Mignery G.A., "Phospholipid binding by a synaptic vergulatory region of protein kinase C. Nature 345:260-263(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAY-1991 (Rel. 18, Created)
01-FEB-1996 (Rel. 33, Last sec
20-AUG-2001 (Rel. 40, Last and
SYNAPTOTAGMIN I (SYTI) (P65)
                                                                                                                                                                                                                                                                                                                                                       Shao X., Fernandez I., Suedhof T.C., Rizo J.; "Solution structures of the Ca2+-free and Ca2+-bound C2A
                                                                                                                                                                                                                                                                                                                                                                                                                               Sutton R.B., Davletov B.A., Berghuis "Structure of the first C2 domain of Ca2+/phospholipid-binding fold."; Cell 80:929-938(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=95211844;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. MEDLINE=90238548;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P21707;
01-MAY-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SYT1_RAT
                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=99036632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X-RAY CRYSTALLOGRAPHY (1.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         272
European B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                             SIMILARITY:
SIMILARITY:
                                                                                                                                                               SUBUNIT: HOMOTETRAMER (PROBABLE).
SUBCELLULAR LOCATION: SYNAPTIC VESICLES AND
TISSUE SPECIFICITY: PREDOMINANTLY EXPRESSED
                                                                                                                                                                                                      SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL BACKBONE. A CA2+-DEPENDENT INTERACTION BETWEEN SYNAPTOTAGMIN AND PUTATIVE RECEPTORS FOR ACTIVATED PROTEIN KINASE C HAS ALSO BEEN REPORTED. IT CAN BIND TO AT LEAST THREE ADDITIONAL PROTEINS IN A CA2+-INDEPENDENT MANNER. THESE ARE NEUREXINS, SYNTAXIN AND AP2.
               SWISS-PROT entry is copyright. It is produced through a collaboratic een the Swiss Institute of Bioinformatics and the EMBL outstation een the Swiss Institute. There are no restrictions on in
                                                                                                                       DOMAIN:
                                                                                                                                                  PHYLOGENETICALLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MQNGKRLKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKV 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FVGYNSTGAELRHWSDMLANPRRPIAQWHTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VLGAAAEGTGGEHWKEICDYPRRQIAKWHVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LMNREIIKRNYRKSSGRGELLISLCYQSTINTLTVVVLKARHLPKSDVSGLSDPYVKVNL 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQL 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVDFGHVTEEWRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIEL----SEGKM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LQSAE--KEEQEK---LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHL
                                                                                                                                                                                                                                                                                                                                                                                                   BY NMR OF 140-267
                                                                          CONTAINS
BELONGS T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                       FIRST
                                                                                                                                                                                                                                                                                                                                                                                    PubMed=9819203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APHY (1.9 ANGSTROMS)
PubMed=7697723;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=2333096;
                                                                                                                                                 YOUNGER BRAIN REGIONS,
                                                                                                                       C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence up
                                                                          TO THE
                                                                                                                       DOMAIN MEDIATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                         DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                          SYNAPTOTAGMIN FAMILY.
      as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  vesicle
C.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       422
                                                                                                                                                                                                                                                                                                                                                                                                                                                           A.M., Suedhof T.C., Spra synaptotagmin I: a novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Jahn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OF 132-266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                       CA(2+)-DEPENDENT
      ere are
as its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70
.
                                                                                                                                                    AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Suedhof T.C.;
                                                                                                                                                 CHROMAFFIN GRANULES IN ROSTRAL, IN SOME ENDOCRINE
       content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               homologous
                                                                                                                                                                                                                                                                                                                                                       domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sprang
                                                                                                                       PHOSPHOLIPID
                                  a collaboration - MBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ť
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S.R.;
                                                                                                                                                                                                                                                                                                                                                         of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  271
       no
```

```
RESULT 13

SY61_DISOM STAND#

ID SY61_DISOM STAND#

AC P24505;

DT 01-MAR-1992 (Rel. 21

DT 01-MAR-1992 (Rel. 27

O1-NOV-1995 (Rel. 37

OVNAPTOTAGMIN A (SY
                                                                                                                                                                                                                                                                 QΥ
밁
                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                 DЬ
                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
SEQUENCE
                         Discopyge ommata (Electric ray).
Discopyge ommata (Electric ray).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Chondrichthyes;
Elasmobranchii; Squalea; Hypnosqualea; Pristiorajea; Batoidea;
Torpediniformes; Narcinoidei; Narcinidae; Discopyge.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00399; SY SMART; SM00239; C2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR00156 Pfam; PF00168; C2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (Some send an email to license@isb-sib.ch).
SEQUENCE FROM N.A.
                                                                           P65-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR00360; C2DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; x52772; CAA36981.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               modified and this statement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                   377
                                                                                                                                                                                                                        392
                                                                                                                                                                                                                                              317
                                                                                                                                                                                                                                                                   332
                                                                                                                                                                                                                                                                                           262
                                                                                                                                                                                                                                                                                                                272
                                                                                                                                                                                                                                                                                                                                      203
                                                                                                                                                                                                                                                                                                                                                           216
                                                                                                                                                                                                                                                                                                                                                                                 144
                                                                                                                                                                                                                                                                                                                                                                                                       156
                                                                                                                                                                                                                                                                                                                                                                                                                                                   105
                                                                                                                                                                                                                                                                                                                                                                                                                             84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1RSY; 08-MAY-95.
1BYN; 21-OCT-98.
                                                                                                                                                                                                  FVGYNSTGAELRHWSDILANPRRPIAQWHTL
                                                                                                                                                                                                                                                          YHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQL
                                                                                                                                                                                                                                                                                                                                                 KLQYSLDYDFQNNQLLVGTIQAAELPALD-MGGTSDPYVKVFLLPEKKKKFETKVHRKTL
                                                                                                                                                                                                                        VLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                              LMNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNL
                                                                                                                                                                                                                                                                                                                                      NPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVDFGHVTEEWRD
                                                                                                                                                                                                                                                                                                                                                                                                      TLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTL
                                                                                                                                                                                                                                                                                                                                                                                                                             FKKKNKKKGKEKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEEPKEEEKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  FPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLK---SSTSLT-SEEK----QEKLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S09595;
                                                                                                                                                                                                                                                                                           LQSAE--KEEQEK---LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHL
                                                                                                                                                                                                                                             MQNGKRLKKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIDKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PS00499; C2_DOMAIN_1; 2. PS50004; C2_DOMAIN_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; IPR000008; C2.
; IPR002149; LRI.
; IPR001565; Syna
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53
80
135
156
286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S09595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Repeat;
                                                                                                                                             STANDARD;
                                                                                     (SYNAPTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53
79
421
381
382
244
47453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYNAPTOTAGMN C2; 2.
                                                                                21, Created)
21, Last sequence update)
32, Last annotation updat
SYNAPTIC VESICLE PROTEIN C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synaptotagmin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synapse; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (F
PHOSPHOLIPID E
C2 DOMAIN 1.
C2 DOMAIN 2.
N-LINKED (GLC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VESICULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FB78A1C392EAD7F2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                     cion update)
PROTEIN O-P65-A)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   580;
No. 1.
                                                                                                                                             427
                                                                                                                                                                                                   407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
.2e-32;
                                                                                                                                             Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 421;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                             143
                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                           271
                                                                                                                                                                                                                                                                                                                                                                                 202
                                                                                                                                                                                                                                                                                                                                                                                                       215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
```

```
Query Match
Best Local S
Matches 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HSSP; P21707; 1RSY.
InterPro; IPRO00008; C2.
InterPro; IPRO01008; C2.
InterPro; IPRO01565; Synaptotagmin.
Pfam; PF00168; C2; 2.
PRINTS; PR00350; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
PROSITE; PS0049; C2_DOMAIN_1; 2.
PROSITE; PS0049; C2_DOMAIN_2; 2.
PROSITE; PS0049; C2_DOMAIN_2; 2.
PROSITE; PS0049; C2_DOMAIN_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M64275; AAA49227.1; -. PIR; JH0413; JH0413. HSSP; P21707; 1RSY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-91273991; PubMed-2054189;
Wendland B., Miller K.G., Schilling J., Scheller R.H.;
"Differential expression of the p65 gene family.";
"Differential expression of the p65 gene family.";
"Neuron 6:993-1007(1991).
"INEUTON: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS
"I-T FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS
SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT
REQUIRES IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT
REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL
                                                                         324
                                                                                                                                                                                                                                                                                                                                                         151
                                                                                                                       333
                                                                                                                                                                     269
                                                                                                                                                                                                                                                               210
                                                                                                                                                                                                                                                                                                                                                                                                       157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107
                                                                                                                                                                                                                                                                                                                                                                                                                                                     91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CELLS.
SIMILARITY: CONTAINS 2 C2 DOMAINS.
SIMILARITY: BELONGS TO THE SYNAPPOTAGMIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BACKBONE.
SUBUNIT: HOMODIMER OR HOMOTRIMER (POSSIBLE).
SUBCELLULAR LOCATION: SYMAPTIC VESICLES IN NEURONS
TISSUE SPECIFICITY: FOREBRAIN, CEREBELLUM, AND NEUR
                                                                                                                                                                                                                                                                                                                                                                               LGAAAEGTGGEHWKEICDYPRRQIAKWHVL
                                                                         QNGKRLKKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKVF
                                                                                                       HAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLV 392
                                                                                                                                                                   QGAE--KEEQEK---LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHLM
                                                                                                                                                                                              MNREIKRNVRKSSGRGELLISLCYQSTINTLTVVVLKARHLPKSDVSGLSDPYVKVNLY
                                                                                                                                                                                                                                                                                        LQFSLDYDFQNNQLIVGIIQAAELPALDVGG-TSDPYVKVFVLPDKKKKYETKVHRKTLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                KKNKKKGKEKGGKNAMTMKDVKEMGKSGKEQALKDEDEDAETGLTTDGKEEEKEDEKLGK 150
                                                                                                                                                                                                                                                               PVFNESFIF-KIPYSELGGKTLVMAVYDFDRFSKHDVIGEAKVPMNTVDFGHVTEEWRDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
58
85
141
162
292
292
26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synapse; Multigene family; Glycoprotein.

YESICULAR (POTENTIAL).

84 POTENTIAL.

427 CYTOPLASMIC (POTENTIAL).

887 PHOSPHOLIPID BINDING (PROBABLE).

250 C2 DOMAIN 1.

250 C2 DOMAIN 1.

26 N-LINKED (GLCNAC...) (POTENTIAL).

47768 MW; D23F9488ABAB6OOA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 579.5;
Pred. No. 1.3e
6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ..3e-32;
nes 115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1; Length 427;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NEUROENDOCRINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156
                                                                                                                                                                   323
                                                                                                                                                                                                                                                            268
                                                                                                                                                                                                                                                                                                           272
                                                                                                                                                                                                                                                                                                                                                      209
                                                                                                                                                                                                                                                                                                                                                                                                  216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7;
                                                                                                                                                                                                                                                                               Service of the servic
                        δð
                                                                      DЬ
                                                                                                               γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                        Query
Best L
                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                           Transmembrane;
DOMAIN 56
TRANSMEM 56
DOMAIN 83
DOMAIN 138
DOMAIN 159
DOMAIN 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SYT1_CHICK
P47191;
01-NOV-1995
01-NOV-1995
01-NOV-1995
                                                                                                                                                                                                                                                                                  CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genes
Dev. I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SMART; SM00239; C2; 2.

PROSITE; PS00499; C2_DOMAIN_1; 2.

PROSITE; PS50004; C2_DOMAIN_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; S64957; AAB28081.1; -.
HSSP; P21707; INSY.
InterPro; IPR000008; C2.
InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin.
Pfam; PF00168; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Coordinate and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=93374184; PubMed=8365570;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN
SMART; SM00239; C2; 2.
                           115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CBI_TaxID=9031;
                                                                      44
                                                                                                                  8
                                                                                                                                                                                        Match
Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DURING TRAFFICKING OF SYNAPTIC VESTICLES AT THE MEMBRANE INTERACTIONS DURING TRAFFICKING OF SYNAPTIC VESTICLES AT THE ACTIVE ZONE OF THE SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL BACKBONE.

BACKBONE.
SUBUNIT: HOMOTETRAMER (PROBABLE).
SUBCLLULAR LOCATION: SYNAPTIC VESTICLES AND CHROMAFFIN GRANULES.
SIMILARITY: COWTAINS 2 CZ DOMAINS.
SIMILARITY: COWTAINS 2
PSDLENATPKLFLEGEKESVSPESLK---SSTSLT-SEEKQ-----EKLGTLFFSLEYNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VGYNSTAAELRHWSDMLANPRRPIAQWHTL
                                                                                                                                                                                        Similarity
                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                1
83
138
159
289
                                                                                                                                                                                                                                                                               ; Repeat; Synapse; S6 82 POT 83 424 CYT 38 384 PHO 62 247 C2 25 25 N-tt 4 AA; 47505 MW; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                      26.1%;
                                                                                                                                                                71;
```

```
424
B
```

01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
01-NOV-1995 (Rel. 32, Last annotation update)
SYNAPTOTAGMIN I (P65).

Gallus gallus (Chicken). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;

x., Bixby J.L.;
xrdinate and noncoordinate regulation of synaptic vesicle protein s during embryonic development.";
Biol. 159:327-337(1993).

This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).

POTENTIAL.
CYTOPLASMIC.
PHOSPHOLIPID BINDING (PROBABLE).
C2 DOMAIN 1.
C2 DOMAIN 2.
N-LINKED (GLCNAC. . .) (POTENTIAL).
C602676F8F679718 CRC64; Glycoprotein.

`.&

Š Ър QΥ ф Qγ Вр γ g Qy Вb

NLKKKF----MNELNKTPLPPWALIAIAIVAVLLILTCCFCLCKKCL---FKKKNKKKGK 96 NSKKKFGADDKNEVKNKPAVPKNSLHLD-------LEKRDLNGNFPKTNLKPGS Score 575; DB Pred. No. 2.7e DB 1; I 2.7e-32; les 129; Length 424; Indels 40; Gaps 114 165 11;

```
SYNGRESULT
ID SYNGRESULT
ID SYNGRESULT
OIL SYNGRESU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _DISOM
SY62_DISOM
                                                                                       InterPro: IPR000008; C2.
InterPro: IPR002149; LRI.
InterPro: IPR001565; Synaptotagmin
Pfam: PF00168; C2; 2.
                                                                                                                                                                                                                                                                                                                                           entities re
or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.

MEDILINE-91273991; PubMed=2054189;

Wendland B., Miller K.G., Schilling J., Scheller R.H.;

"Differential expression of the p65 gene family.";

"Differential expression of the p65 gene family.";

Neuron 6:993-1007(1991).

-i- FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS

DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE

SYNAPSE. IT BINDS ACIDIC PHOSPHOLIPIDS WITH A SPECIFICITY THAT

REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Discopyge ommata (Electric ray).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Chondrichthyes;
Elasmobranchii; Squalea; Hypnosqualea; Pristiorajea; Batoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAR-1992 (Rel. 21, Created)
01-MAR-1992 (Rel. 21, Last seq
01-NOV-1995 (Rel. 32, Last ann
SYNAPTOTAGMIN B (SYNAPTIC VESI
                                                                                                                                                                                                                                             EMBL; M64276; AAA49228.1; -. PIR; JH0414; JH0414.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       between
                             PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN
                                                                                                                                                                                                                HSSP; P21707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=7785;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            390 LRHWSDMLANPRRPIAQWHTL 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97
                                                                                                                                                                                                                                                                                                                                                                                                                                   s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EN European Bioinformatics Institute. There are no restructure by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBUNIT: HOMODIMER OR HOMOTRIMER (POSSIBLE).
SUBCELLULAR LOCATION: SYNAPTIC VESICLES IN NEURONS
TISSUE SPECIFICITY: SPINAL CORD, BRAINSTEM, MIDBRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY: CONTAINS 2 C2 DOMAINS.
SIMILARITY: BELONGS TO THE SYNAPTOTAGMIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GEHWKEICDYPRRQIAKWHVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QEK----LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHLMQNGKRLKKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPDKKKKYETKVHRKTLNPVFNEQFTF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KTTIKKNTLNPYYNESFSFEVPFEQIQKVQIVVTVLDYDKIGKNDAIGKVFVGYNSTGAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -KVPYSELGGKTLVMAVYDFDRFSKHDIIGEYKVAMNTVDFGHVTEEWRDLQSAE--KEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEVEKLGKIQYSLDYDF
                                                                                                                                                                                                                                                                                                                                        non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                      1RSY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
      C2;

    21, Last sequence update)
    32, Last annotation update)
    (SYNAPTIC VESICLE PROTEIN 0-P65-B).

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Narcinoidel; Narcinidae; Discopyge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MIDBRAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ELECTRIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    on
```

```
Q
                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                Š
                                                                                        д
                                                                                                            Ş
                                                                                                                                    рь
                                                                                                                                                        δÃ
                                                                                                                                                                                B
                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 140
                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transmembrane; DOMAIN
                     364
                                            307
                                                                 304
                                                                                        249
                                                                                                             245
                                                                                                                                     191
                                                                                                                                                         185
                                                                                                                                                                                131
                                                                                                                                                                                                      142
                                                                                                                                                                                                                                                    104
                                                                                                                                                                                                                             71
                                                                                                                                                                                                                                                                                                44 KSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNG 103
                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                                                                                                                                                                                                                                                          20
           CEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWHVL
                                                                                   NFPKTNLKPGSPSDLENATPKLFL-------EGEKESVSPESLKS 141
                                                                                                                                                                                                                                                                                                                      140;
FEQIQKVQVCVTVLDYDKIGKNDAIGKIFVGSNASGTELRHWSDMLANPRRPIAQWHSL
                                          LTVCILEAKNLKKMDVGGLSDPYVKIHLLQNGKRLKKKKTTVKKNTLNPYYNESFSFEIP
                                                       LTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIP
                                                                                                                                                                                                                             ELQKIPLPPWALIAIAIVSGLLLLTCCLCICKKCCCKKKKNKKEKGKGKKNDINMKDVKG
                                                                                                                                                                                                                                                                         KTRETHPQAFVAPMATATMMP-----IDTGDNSTEAGVPGEGKNDVFEKLKEKFMN- 70
                                                                                                             FDRFSRDDIIGEVLIPLSGIELSEGKMLMN-REIIKRNVRKSSGRGELLISLCYQSTTNT
                                                                                                                                     -MGGTSDPYVKVFLLPDKKKKYETKVQKKTLNPTFNESFVF-KVPYQELGGKTLMMAVYD
                                                                                                                                                         EQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTILS
                                                                                                                                                                                SGGNQDDDDAETGLTEGEDKEEEAKEEEKLGKIQFSLDYDFQANQLTVGIIQAAELPALD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00499; C2_DOMAIN_1; 2. PS50004; C2_DOMAIN_2; 2.
                                                                                                                                                                                                                                                                                                                                                                             1
75
102
153
173
304
6
46
439 1
                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Repeat;
                                                                                                                                                                                                     TSLTSEE-----KQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMD 184
                                                                                                                                                                                                                                                                                                                                                                          74
101
439
399
262
395
6
6
46
49278
                                                                                                                                                                                                                                                                                                                                 26.1%;
33.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synapse; Multigene
                                                                                                                                                                                                                                                                                                                                                                                MW;
                                                                                                                                                                                                                                                                                                                      77;
                                                                                                                                                                                                                                                                                                                                 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                            PHOSPHOLIPID BINDING (PROBABLE).
C2 DOMAIN 1.
C2 DOMAIN 2.
C1 DOMAIN 2.
N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL);
2033F05FD8C69F39 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    vesicular (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL
                                                                                                                                                ::
::
                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                574.5;
No. 3.
                                                                                                                                                                                                                                                                                                                                    .1e-32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                             439;
                                                                                                                                                                                                                                                                                                                      53
'
                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                             130
                                                                                                                                                                                190
                                                                                                              303
                                                                                                                                     248
                                                                                                                                                          244
```

Qy Dр Qy 망 Qγ Ъ Qy Db Ş 밁

밁

Job time: 190 sec December 12, 2001, 10:57:59

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                      SPTREMBL_17:*

1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
4: sp_human:*
5: sp_inverteb:
6: sp_mammal:*
7: sp_mhc:*
8: sp_organel1:
9: sp_plant:*
10: sp_plant:*
11: sp_rodent:
12: sp_virus:*
13: sp_vertebr:
13: sp_vertebrs:
14: sp_unclass:
Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             473505 seqs, 146272329 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           December 12, 2001, 10:54:24; Search time 25.64 Seconds (without alignments) 2424.561 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-680-121-2
2201
1 MAPITTSREEFDEIPTVVGI.....KEICDYPRRQIAKWHVLCDG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                         sp_archea:*
sp_bacteria:*
sp_fungi:*
                                                                                                                                                  sp_rodent:*
sp_virus:*
sp_vertebrate:*
sp_unclassified:*
                                                                                                                                                                                                                                                sp_organelle:*
sp_phage:*
                                                                                                                                                                                                                                                                                  sp_invertebrate:*
sp_mammal:*
sp_mhc:*
                                                                                                                                                                                                                           sp_plant:*
                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            473505
```

45	44	43	42	41	40	39	38	37	36	35	34	<u>ω</u>	32	31	30	29	28	27	26	25	24	23	22	21	20
384.5	390.5	393.5	394.5	415	427.5	428	430.5	451.5	463	464.5	474	517	518.5	544.5	547	563.5	580.5	586.5	588	590	592	598	598	603	613
17.5	17.7	17.9	17.9	18.9	19.4	19.4	19.6	20.5	21.0	21.1	21.5	23.5	23.6	24.7	24.9	25.6	26.4	26.6	26.7	26.8	26.9	27.2	27.2	27.4	27.9
400	315	405	403	257	412	412	412	361	474	474	474	587	590	390	279	491	386	280	395	523	498	511	426	511	429
4	ப	11	1	υ	11	4	11	4	4	4	11	11	4	U	11	Ľ	11	G	ഗ	11	11	11	11	11	U
Q14183	016700	035527	P70611	Q20354	P70610	Q14184	P70169	043330	Q9NZ18	Q9BSW7	Q62807	P97791	Q9BQG1	P91493	Q62748	Q9R0N9	Q9R0N5	Q9V4C4	Q9U8R6	Q9R0N4	008625	Q9R0N8	Q9QUK7	Q62746	Q9BMF3
Q14183 homo sapien	_	O35527 mus musculu	P70611 rattus norv	Q20354 caenorhabdi	P70610 rattus norv	Q14184 homo sapien	P70169 mus musculu	043330 homo sapien		Q9bsw7 homo sapien	Q62807 rattus norv	P97791 mus musculu	Q9bqg1 homo sapien	P91493 caenorhabdi			Q9r0n5 mus musculu	drosophi	þ			Q9r0n8 mus musculu	mus mus	Q62746 rattus norv	Q9bmf3 manduca sex

ALIGNMENTS

Qy	Qy Db	Ма Ма	SQ	DR R	DR.	DR R	DR	DR.	7 5	DR DR	RL	RT	RT	RT	RA	RX	RP	RN	2 6	88	SO	DE	DŢ	DT	DT	AC.		RESULT
61 DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN 120	1 MAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYKFVHVLKGV 60 	Query Match 100.0%; Score 2201; DB 4; Length 425; Best Local Similarity 100.0%; Pred. No. 2e-153; Matches 425; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	SEQUENCE 425 AA; 47958 MW; DA3D4CB175CB528D CRC64;	PS00499; C2_DOMAIN_1;		PRINTS: PRO0360; C2DOMAIN.	20.5	IPR001565;	Interpro Idenologia, ret	EMBL; AF299075; AAG37229.1;	J. Biol. Chem. 275:36920-36926(2000).	•		"The Human Synaptotagmin IV Gene Defines an Evolutionary Break Point	Ferguson G.D., Chen XN., Korenberg J.R., Herschman H.R.;	MEDLINE=20538435; PubMed=10938284;	SEQUENCE FROM N.A.	[1]	Mahmatta; Eucherta; Fiimales; (acafinini; homininade; homo. N/BT T=xxTD-QACA.	Chordata; Craniata; Vertebrata;		SYNAPTOTAGMIN IV.	(TrEMBLrel. 17, Last	16,	(TrEMBLrel.		OGHORO DREITMINARY: DRT: 425 AA	LT 1

```
δÃ
                                            В
                                                                                   QΥ
                                                                                                                                                                                                                                                        ALD DR REST OF REST OF SQUEEN 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΩУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ъ
                                                                                                                                        Matches
                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                 TISSUE-BRAIN;
TISSUE-BRAIN;
TISSUE-BRAIN;
Nagase T., Kikuno R., Ishikawa K., Hirosawa M., Ohara O.;
Nagase T., Kikuno R., Ishikawa K., Hirosawa M., Ohara O.;
Prediction of the coding sequences of unidentified human genes.XVI.
The complete sequences of 150 new cDNA clones from brain which code
for large proteins in vitro.";
DNA Res. 7:65-73(2000)
EMBL; AB037763; BAA92580.1; -.
InterPro; IPR000008; C2:
InterPro; IPR000155; Synaptotagmin.
TreePro; IPR001555; Synaptotagmin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         O992K4
O992K4
O992K4
O992K4;
O1-OCT-2000 (TrEMBLrel. 15, C:
O1-OCT-2000 (TrEMBLrel. 15, L:
O1-JUN-2001 (TrEMBLrel. 17, L:
O1-JUN-2001 (TREMBLREL);
KIAA1342 PROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                        NON_TER
                                                                                                                                                                                                                                                                                                                                            Pfam; PF00168; C2; 2
PRINTS; PR00350; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
                                                                                                                                                                                                                                                                                             PROSITE; PS00499; C2_DOMAIN_1; PROSITE; PS50004; C2_DOMAIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KIAA1342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                 N
                                                                      MAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYKFVHVLKGV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DIPCEGLEDISVEFLYLDSERGSRNEVIGQLYLGAAAEGTGGEHWKEICDYPRRQIAKWH 420
DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN 120
                                               MAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYKFVHVLKGV 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETETEYGIPYTQIQELALHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNÄVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN
                                                                                                                                                                                                                                                      426 AA; 48086 MW; CA46AF76F27A7D09 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      425
                                                                                                                                  100.0%; Score 2201; DB 4; ilarity 100.0%; Pred. No. 2e-153; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                  22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA
                                                                                                                                                                                  Length 426;
                                                                                                                                        Indels
                                                                                                                                     0;
                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                     0;
                    QΥ
                                                                 ДЪ
                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            рь
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D
```

```
RESULT
OPRONO
OPPORE
OPPORO
OP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P SEQUENCE FROM N.A.

C STRAIN=ICR; TISSUE=CEREBELLUM;
C STRAIN=CCR; TISSUE=CEREBELLUM;
X MEDLINE=20002669; PubMed=10531343;
X MEDLINE=20002669; PubMed=10531343;
X Fikuda M., Kanno E., Mikoshiba K.;
T "Conserved N-terminal cysteine motif is essential for homo-and the terodimer formation of synaptotagmins III, V, VI, and X.";
J. Biol. Chem. 274:31421-31427(1999).
J. Biol. Chem. 274:31421-31427(1999).
R HSLE MAD26808; BAA85780.1; -
R HSLE; P21707; LRSY
R HSLE; P21707; LRSY
R MGD; MGI:1859547; Sytl1.
R InterPro; IPRO02149; LRI.
R InterPro; IPRO02149; LRI.
R InterPro; IPRO01569; C2:
R Pfam; PF001569; C2:
D DENTES BEO01567 C200411
                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9R0N3
Q9R0N3;
01-MAY-2000
01-MAY-2000
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                         PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
PROSITE; PS50004; C2_DOMAIN_2; 2.
SEQUENCE 430 AA; 48359 MW; 25E7CDFC4B4BE036 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SYNAPTOTAGMIN
SYT11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                                                                                                 Local
                                                                                    1 MAEITNIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTCCHQQAEKKHKTPPYKFIHMLK
                                                                                                                                     1 MAPITTSREEFDEIPTVVGIFSAFGLVFTVS--LFAWICCQRKSSKSNKTPPYKFVHVLK 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GVDIYPENLNSKKK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VLCDG 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VLCDG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN
                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                          53.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13,
13,
                                                                                                                                                                                                70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                             Score 1167.5; DB 11; Length 430; Pred. No. 1.1e-77;
                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               430 AA.
: ||: || :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                      93;
                                                                                                                                                                                                   Indels
                                                                                                                                                                                                   61;
                                                                                                                                                                                                Gaps
                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                   8
```

```
QΥ
                         Ъ
                                            QY
                                                                            Вb
                                                                                               QY
                                                                                                                               DЬ
                                                                                                                                                    Qy
                                                                                                                                                                                   В
                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                          ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O9BT88;
01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
SIMILAR TO SYNAPTOTAGMIN 11.
                                                                                                                                                                                                                                                                                                                                                     Strausberg R.;
Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases
EMBL; BC004291; AAH04291.1; -.
SEQUENCE 431 AA; 48306 MW; A7F76AD745C0FF7D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-LYMPHOMA;
                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9BT88
 290
                           234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                  230
                                                                             174
                                                                                                       170
                                                                                                                                 115
                                                                                                                                                         114
                                                                                                                                                                                    61
                                                                                                                                                                                                             59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61
                                                                                                                                                                                                                                       ـــ
                                                                                                                                                                                                                                                               ш
                                                                                                                                             SPSDLENATPKL----FLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKA 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVI 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTR 209
: ||:| ||:|||:||:|| || || || || ||:|:|:|||||
EDVMLGSLTFSVDYNFPKKALVVTIQEAHGLPVMDDQTQGSDPYIKMTILPDKRHRVKTR 212
                                                                                                                                                                                                                                    MAEITNIRPSFDVSPVVAGLIGASVLVVCVSVTVFVWSCCHQQAEKKHKNPPYKFIHMLK 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VNVYYGRKRIAKKKTHVKKCTLNPVFNESFIYDIPTDLLPDISIEFLVIDFDRTTKNEVV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GISIYPETLSNKKKIIKVRRDKDGPRRESGRGNLLINAESGLLSHDKDPRGPSPASCMDQ 120
ELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLS-DPYVKVNLYHAKKRISKKKTHVKKC
                                      FVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIP
                                                                                                                                                                                  GISIYPETLSNKKKIIKVRRDKDGPGREGGRRNLLVDAAEAGLLSRD-----
                                                                                                                                                                                                            GVDIYPENLNSKKKF-----GADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPG 113
                                                                                                                                                                                                                                                             MAPITTSREEFDEIPTVVGIFSAFGLVFTVS--LFAWICCORKSSKSNKTPPYKFVHVLK 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LPI---KRDYGEELRSPMTSLTP---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LHLDLEKRDLNGNF--PKTNLKPGSPSDLENATPKLFLEGEKESVSPESLKSSTSLTSEE 149
                                                                            LVVTIQEAHGLPVMDDQTQGSDPYIKMTILPDKRHRVKTRVLRKTLDPVFDETFTFYGIP
                                                                                                                               SGSCIDQLPIKMDYGEELRSPITSLTPGESK-TTSPSSPEEDVMLGSLTFSVDYNFPKKA
                        YSQLQDLVLHFLVLSFDRFSRDDVIGEVMVPLAGVDPSTGKVQLTRDIIKRNIQKCISRG
                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                     52.8%; Score 1162; DB 4; Length 4
52.4%; Pred. No. 2.8e-77;
tive 77; Mismatches 111; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; I Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                    DB 4; Length 431; .8e-77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --GESKPTSP--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
                                                                                                                                                                                   -KDPRGPS
                                                                                                                                                                                                                                                                                        20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSPE 152
                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           272
                                                                                                                               173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  269
                                                  289
                                                                            233
                                                                                                                                                                                   114
                                                                                                                                                                                                                                                                                        7;
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                      Qy
                                                   밁
                                                                          Qγ
                                                                                                      В
                                                                                                                           Qy
                                                                                                                                                       B
                                                                                                                                                                               δÃ
                                                                                                                                                                                                          Ър
                                                                                                                                                                                                                                 QY
                                                                                                                                                                                                                                                            Вр
                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 228; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin.
Pfam; PF00168; C2; 2.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
PROSITE; PS50004; C2 DOMAIN 2; 2.
PROSITE; PS50004; C2 DOMAIN 2; 2.
SEQUENCE 430 AA; 48268 MW; CIFA1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          008835; PRELIMINARY;
008835; Ol-JUL-1997 (TrEMBLrel. 04,
01-JUL-1997 (TrEMBLrel. 04,
01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              von Poser C., Ichtchenk
J. Biol. Chem. 0:0-0(0)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AF000423; AAB58344.1; HSSP; P21707; 1RSY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE-BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SYNAPTOTAGMIN XI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000008; C2.
 347
                        343
                                                   287
                                                                                                      227
                                                                                                                             224
                                                                                                                                                        167
                                                                                                                                                                                  164
                                                                                                                                                                                                            121
                                                                                                                                                                                                                                    107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    294
                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                        59
                                                                                                                                                                                                                                                                                                                \vdash
                                                                                                                                                                                                                                                                                                                                          ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               THVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGT-G
                                                                                                                 TFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVR
                                                                                                                                                                                                                                                                                                                               MAPITTSREEFDEIPTVVGIFSAFGLVFTVS--LFAWICCQRXSSKSNKTPPYKFVHVLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VCESPRKPVAKWHSLSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ICDYPRRQIAKWHVLCD 424: |: ||: ||: |||| ||:
THVKKCTLNPIFNESFIYDIPTDLLPDISIEFLVIDFDRTTKNEVVGRLILGAHSVTTSG
                                                               KSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLS-DPYVKVNLYHAKKRISKKK 342
                                                                                                                                                                     NFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETF
                                                                                                                                                                                                            LPIKRDYGEELRSPMTSLTP-----GESKPTSP-----SSPEEDVMLGSLTFSVDY
                                                                                                                                                                                                                                   ---KTNLKPGSPSDLENATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEY 163
                                                                                                                                                                                                                                                              GISIYPETLSNKKEIIKVRRDKDGSHRESGRGNLLVNAESGLLSHDRDPRGPSPASCIDQ
                                                                                                                                                                                                                                                                                 GVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEK-----RDLNGNFP-----
                                                                                                                                                                                                                                                                                                                MAEITNIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTCCHQQAEKKHKTPPYKFIHMLK
                                                  KCISRGELQVSLSYQPVAQRMTVVVLKARHLPKMDITGLSGNPYVKVNVYYGRKRIAKKK
                                                                                                     TFYGIPYSQLQDLVLHFLVLSFDRFSRDDVIGEVMVPLAGVDPSTGKVQLTRDIIKRNIQ
                                                                                                                                                       NFPKKALVVTIQEAHGLPVMDGQTQGSDPYIKMTILPDKRHRVKTRVLRKTLDPVFDETF
                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ichtchenko K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata; Craniata; Vertebrata; Euteleostomi; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                               52.5%; Score 1156.5; I 51.5%; Pred. No. 7e-77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                430
                                                                                                                                                                                                                                                                                                                                                                   78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update;
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                   2.
C1FA13CB9177C825 CRC64;
                                                                                                                                                                                                                                                                                                                                                                   Mismatches 104; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ×
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rizo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J.,
                                                                                                                                                                                                                                                                                                                                                                                            DB 11; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sudhof
                                                                                                                                                                                                                                                                                                                                                                   ω
ω
                                                                                                                                                                                                                                                                                                                                                                  Gaps
                         401
                                                                                                                             283
                                                                                                                                                                                  223
                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                        106
                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                          58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    353
                                                   346
                                                                                                                                                                                                            166
                                                                                                                                                        226
                                                                                                                                                                                                                                                                                                                                                                   7;
```

402 GEHWKEICDYPRRQIAKWHVLCD

AEHWREVCESPRKPVAKWHSLSE

```
DESCRIPT

OCHERATION

OCHERATION

DE GOMENT

DE GOMENT
```

```
DR RESULT ON SERVICE OF SERVICE O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DR DR DR DR DR DR DR DR DR DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΩУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
Katsuyama Y., Matsumoto J., Okamura Y.;

"Regulation of synaptotagmin gene in ascidian eml
Submitted (JUN-2000) to the EMBL/GenBanK/DDBJ da'
EMBL, AB044144; BAB18864.1; -
InterPro; IPR0002149; LRI.
InterPro; IPR0002149; LRI.
InterPro; IPR001565; Synaptotagmin.
InterPro; IPR001565; Synaptotagmin.
PRINT'S, PR001590; C2DOMAIN.

PRINT'S; PR00350; C2DOMAIN.
SMART; SM00239; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9GRB0;
Q9GRB0;
Q1-MAR-2001
Q1-MAR-2001
Q1-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR002149; LRI.
InterPro; IPR002165; Synaptotagmin.
Pfam; PF00168; C2; 2.
PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; C2; 2.
SMART; SM00239; C2; 2.
PROSITE; PS00499; C2_DOMAIN_1; 1.
PROSITE; PS00499; C2_DOMAIN_2; 2.
PROSITE; PS500049; C2_DOMAIN_2; 2.
PROSITE; PS500049; C2_DOMAIN_2; 3.
PROSITE; PS500049; C2_DOMAIN_2; 3.
PROSITE; PS500049; C2_DOMAIN_2; 3.
                                                                                                                                                                                                                                                                                                                                                                          Halocynthia roretzi (Sea squirt).
Eukaryota; Metazoa; Chordata; Uro
Stolidobranchia; Pyuridae; Halocy
NCBI_TaxID=7729;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SYNAPTOTAGMIN
                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72 PHYLKK----SPSPTGGKOMGLLSPMQDQSTSPIAQPNVKYSEEGDGPAQHAEQQ----NG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16 VPAILGLTAA----AVLSSVACICAROMRLRNKKQSQHDASFPFQPTRRPTAVRSPSGQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14 IPTVVGIFSAFGLVFTVSLFAWICCQ-----RKSSKSNKTPPYKFV------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
nes 179; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIP-CEG----LEDISVEFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N----FPKTNLKPGSPSDLENATPKLFLEGEKE-SVSPESLKSSTSLTSEEKQEKLGTLF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VLDSERGSRNEVIGQLVLGAA-AEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GLADPYVKIYLLYNGQRIAKKKTHVKKRTLSPVFNESFAFDIPAAEGAGASLEGVSLELM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E---LSEGKMLMNREIIKRNVR-KSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KVKTRVVRNTRNPVYDEDFTFYGLNMNDLQNMSLHFVILSFDRYSRDDVIGEVVCPLTSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LLDWDRVTKNEVIGRLELGGPNSSSTALNHWNEVCNSPRRQIAEWHKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EIGDISKEALSISKEIQPRSLKIRAQGRGELLISLCWQPAAGRLTVVLLKARNLPRMDVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FKLRYLAERNALMVSIIRCRGLPCKGGSSGTGDIPTGMNGRTQAATDPYVKLQLLPDKQH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FSLEYNFERKAFVVNIKEARGLPAMDEQSMT------SDPYIKMTILPEKKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NQLTVVDGNGLKHSLHNSLHHSPVETIANGSVTITLDDHSLTNGKELTVTDQYGKLGTIY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -HVLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKN-----SLHLDLEKRDLNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34.4%; Score 757; DB 5; Length 47 ilarity 38.2%; Pred. No. 1.5e-47; Conservative 82; Mismatches 137; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                ta; Urochordata; Ascidiacea;
Halocynthia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 474;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14;
```

```
PRONTY

PRONTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                 "Conserved N-terminal cysteine motif is es heterodimer formation of synaptotagmins II J. Biol. Chem. 274:31421-31427(1999). EMBL; AB026804; BAA85776.1; -. HSSP. P2107; IRSY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
PRINTS; PRO0360; C2DOMAIN.
PRINTS; PRO0399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
PROSITE; PS00499; C2_DOMAIN_1; 2
PROSITE; PS50004; C2_DOMAIN_2; 2
SEQUENCE 403 AA; 45472 MW; 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9RON7;
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE;
PROSITE;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-ICR; TISSUE-CEREBELLUM;
MEDLINE-20002669; PubMed-10531343;
                                                                                                                                       MGD; MGI:1859545; Syt7.
InterPro; IPR001008; C2.
InterPro; IPR0012149; LRI.
InterPro; IPR001565; Synaptotagmin.
Pfam; PF00168; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SYNAPTOTAGMIN VII.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9R0N7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GIFSAFGLVFTVSLFAWICCORKSSKSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADDK 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTI 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G-LKNA-----IDLQAVKSLGNSYKEKVQP-DVEDLDNGQEK-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GILIAIGAGLILLCILYCCCKRCCCK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LVLDSERGSRNEVIGQLVLGAAAEGTGGE--HWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVL 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPKLFLEGEKESVSPES 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TVLDYDRMGKNDVIGRLILG--CNGTGAELRHWSDMLASPRRPIAQWHTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPLSGIE----LSEGKMLMNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LPDKKKKYETKVHRKTLNPVFNETFNF-KVNYNEIGEKTLVFAVYDFDRFSRHDIIGEVR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           al Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IQMNQVDLGSVLEEWRDLVNAE----NDKENEKLGDICFSLRYVPTAGKLTVVTLESKNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PS00499; (
PS50004; (
357 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TrEMBLrel.) (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       · EEEERKLGKLQFSLDYDFQQNTLTVGVIQAADLPGMD-MSGTSDPYVKVYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; C2_DOMAIN_1;
; C2_DOMAIN_2;
A; 40720 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13,
13,
17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 645.5;
Pred. No. 1.5e
53; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.
2.
8D21585F00C045E1
  4E63C5779C2ED43E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 403
                                                                                                                                                                                                                                                                                                                                     essential for homo-and III, V, VI, and X.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .5e-39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -----KKKKKAEKK 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi; ; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
```

```
RESULT
Q62747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ДЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                БР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q62747;
Q62747;
01-NOV-1996
01-NOV-1996
01-JUN-2001
                                                                                                MEDLINE-95312080; PubMed=7791877;
MEDLINE-9531208080; PubMed=7791877;
MEDLINE-95312080; PubMed=7791877;
MEDLINE-9531208080; PubMed=7791877;
MEDLINE-95312080; PubMed=7791877;
MEDLINE-95312080; PubMed=7791877;
MEDLINE-95312080; PubMed=7791877;
MEDLINE-95312080; PubMed=7791877;
MEDLINE-95312080; PubMed=7791877;
ME
              Pfam; PF
PRINTS;
                                                      InterPro;
InterPro;
                                                                                                                                                                                                                                                                            "Ca(2+)-dependent and -independent activities synaptotagmins."; Nature 375:594-599(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10116;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2001 (TrEMBLrel. 17, Last annotation SYNAPTOTAGMIN VII (SYNAPTOTAGMIN VIIS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SYTVII
                                                                                                                                                                                            "Synaptotagmin VII as
                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity 36.2
les 153; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EDIPTEKLRETTIIITVMDKDKLSRNDVIGKIYLSWKSGPGEVKHWKDMIARPRQPVAQW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FDIPCEGLEDISVEFLYLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FTILSFDRFSRDDIIGEVLIPLSGIELSEGKMIMNREIIKRNVRKSSGRGELLISLCYQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ----KNEVK-----NKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SANSTIVNTIKARNLKAMDIGGTSDPYVKVWLMYKDKRVEKKKTVTKKRNLNPIFNESFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----SLTSEMLMLSPGSEEDEAHEGCSRENLGRIQFSVGYNFQESTLTVKVMKAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LFLEGEKESVSPESLKSSTSLTSEE----KQEKLGTLFFSLEYNFERKAFVVNIKEARG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RGRGEKKAIKLPAGGKAVNTAPVPGQTPHDESDRR-----TETR-SSVSDLVN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IITVSLSVTIVLCGLCHWCQRKLGKRYK-------NSLETVGTPDSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VFTVSL-----FAWIC--CQRKSSKSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADD--
              PF00168; C;
S; PR00399;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LQVLDYDRFSRNDPIGEVSIPLNKVDLTQ--MQTFWKDLKPCSDGSGSRGELLLSLCYNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LPAKD-FSGTSDPFVKIYLLPDKKHKLETKVKRKNLNPHWNETFLFEGFPYEKVVQRVLY
SM00239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   401
                                   IPR001565;
0168; C2; 2.
                                                                       IPR000008; C2.
IPR002149; LRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
C2;
                SYNAPTOTAGMN
                                                                                                                                                                                                                 Butz S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28.5%;
                                                    Synaptotagmin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01,
01,
17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71;
                                                                                                                                                                                            Fernandez-Chacon
sma membrane Ca2+
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 627.5;
Pred. No. 3.7e
71; Mismatches
                                                                                                                                                                         EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3.7e-38;
hes 128;
                                                                                                                                                                                                                                                                                                                                         R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                sensorin
                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                                                                    Brose
of neu
                                                                                                                                                                                                                 Lao Y.,
                                                                                                                                                                                                                                                                                                                    neural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                         .
N
                                                                                                                                                                                              exocytosis
                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                      Sudhof T.C.;
                                                                                                                                                                                                                   Sudhof T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     71;
                                                                                                                                                                                                                                                                                                                      non-neural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     359
                                                                                                                                                                                                                 Ċ.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11;
```

DR SQ

Gaps 69

8

96

306

243

301

₹ P

183 189

```
Query Match
Best Local Sin
Matches 153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           025393 PREMELLE 01, Cr 01-NOV-1996 (TrEMBLrel 01, Cr 01-NOV-1996 (TrEMBLrel 17, La 01-MN-2001 (TrEMBLrel 17, La 01-MN-2001 (TrEMBLrel 17, La 01-MN-2001)
InterPro: IPRUVALL:
InterPro: IPRO01565; Synaptoumg.
InterPro: IPRO01565; 2.
Pfam: PF00168; C2; 2.
PFINYS: PR00369; CYDOMAIN.
PRINTS: PR00399; SYNAPTOTAGMN.
                                                                                               InterPro; IPR000108; C2.
InterPro; IPR002149; LRI
InterPro; IPR0011867
Pfam: Pro?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE;
PROSITE;
SEQUENCE
                                                                                                                                                                    preterminal.";
proc. Matl. Acad. Sci. U.S.A.
EMBL; D6379; BAA09866.1; -.
HSSP; P21707; IRSY
InterPro; IPRO00008; C2.
                                                                                                                                                                                                                                                                                            MEDLINE-96068684; PubMed-7479868; Mikoshiba K., Fukuda M., Moreira J.E., Lewis F.M.T., Sugimori M., Niinobe M., Llinas R.; "Role of the C2A domain of synaptotagmin in transmitter release as determined by specific antibody injection into the squid giant synaptotagmin in the squid giant synaptotagmin giant synaptotagmin in the squid giant synaptotagmin in the squid giant synaptotagmin giant gian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Loligo pealeii (Longfin squid).
Eukaryota; Metazoa; Mollusca; Cephalopoda; Coleoidea; Teuthoida;
Myopsida; Loliginidae; Loligo.
NCBI_TaxID=6621;
                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. TISSUE=OPTIC LOBE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       399 HQL 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IITVSLSVTIVLCGLCHWCQRKLGKRYK-------NSLETVGTPDSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VFTVSL----FAWIC--CQRKSSKSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADD--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SANSIIVNIIKARNLKAMDIGGTSDPYVKVWLMYKDKRVEKKKTVTKKRNLNPIFNESFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LQVLDYDRFSRNDPIGEVSIPLNKVDLTQ--MQTFWKDLKPCSDGSGSRGELLLSLCYNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LPAKD-FSGTSDPFVKIYLLPDKKHKLETKVKRKNLNPHWNETFLFEGFPYEKVVQRILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----SLTSEMLMLSPGSEEDEAHEGCSRENLGRIQFSVGYNFQESTLTVKVMKAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LFLEGEKESVSPESLKSSTSLTSEE----KQEKLGTLFFSLEYNFERKAFVVNIKEARG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RGRGEKKAIKLPAGGKAVNTAPVPGQTPHDESDRR----TEPRS-----SVSDLVN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----KNEVK-----NKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPK 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FDIPTEKLRETTIIITVMDKDKLSRNDVIGKIYLSWKSGPGEVKHWKDMIARPRQPVAQW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PS00499; 0
PS50004; 0
403 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                LOBE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; C2_DOMAIN_1;
; C2_DOMAIN_2;
A; 45482 MW;
                                                                                                                    Synaptotagmin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 627.5; DB 11; Length Pred. No. 3.7e-38; 2; Mismatches 127; Indels
                                                                                                                                                                                                                                                  92:10703-10707(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2.
3153FD7FC1DEEEFB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11;
           1D 09V067

ID 09V067

AC 09V067;

DT 01-MAY-2000 (TrEMBLrel. 13, Created)

DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)

DT 01-MAY-2001 (TrEMBLrel. 17, Last annotation update)

DE SYT PROTEIN.

GN SYT OR CG3139

OS Drosophila melanogaster (Fruit fly).

CE Ukaryott; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

DE extrygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Thhydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DR
DR
     RP SEQUENCE FROM N.A.

RC STRAIN-BERKELEY;

RX MEDILINE-20196006; PubMed-10731132;

RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

RA Adams M.D., Celniker S.E., Li P.W., Heskins R.A., Galle R.F.,

RA Adams M.D., Celniker S.E., Li P.W., Heskins R.A., Galle R.F.,

RA Adams M.D., Celniker S.E., Li P.W., Evans C.A., Galle R.F.,

RA Adams M.D., Celniker S.E., Li P.W., Bhardir M.D., Zhang O., Chen L.X.,

Sutton G.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.,

RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.,

RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.,

RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,

RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,

RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,

RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,

RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,

RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,

RA Beeson K.Y., Benos P. V., Berman B.P., Bhandari D., Bolshakov S.,

RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,

RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,

RA Borkova D., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,

RA Charry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,

RA Borbios B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,

RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,

RA Godek A., Gong F., Gorrell J.H., Gu Z., Gubart W.M., Glasser K.,

RA Glodek A., Gong F., Gorrell J.H., Gu Z., Gubart W.M., Glasser K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 144; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE;
PROSITE;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                131 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KHDQIGQVQVAMNSIDL--GSVMEEWRDLTSPDNDAEKENKLGDICFSLRYVPTAGKLTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RDDIIGEVLIPLSGIELSEGKMLMN-REIIK--RNVRKSSGRGELLISLCYQSTINTLTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----KDGKKGLKGA-----VDLKGVQLLGNSIKEKVQP----DLEEL------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYKFVHVLKGVDIYPENLNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IQKVSLYVTVVDYDRIGTSEPIGRTFLGCNSTGTGLRHWSDMLANPRRPVAQWHTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VILEAKNLKKMDVGGLSDPYVKISLMLNGKRIKKKKTTVKKCTLNPYYNESFAFEVPFEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPKLFLEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ELEKLPIWAIILICAGVLLFLVCGTYCCCKRICRRRGK-----------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00499; C2_DOMAIN_1;
PS50004; C2_DOMAIN_2;
424 AA; 47656 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          - PMNMEDNEDAESTKSEVKLGKLQYSMDYDFQKGELTVNVIQAADLPGMD-MSGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 627; DB 5; I
Pred. No. 4.3e-38;
5; Mismatches 137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2.
2.
F9733D3B10CFF3C0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 424;
```

Qy 뮍 Ωy 밁 Qy Дβ δÃ В δÃ B

δÃ В δõ

밁 δÃ ğ

```
Qy
                            Qy
                                                                            DЬ
                                                                                                           Q
                                                                                                                                                    В
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McCherson D.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McCherson D.,
RA Liu X., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA McKulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA McHalov G., Milshina N.V., Mobarry C., Morris J., McSheelb J.M.,
RA McHalov G., Milshina N.V., Mobarry C., Morris J., McBeon D.L.,
RA McHalov G., Milshina N.V., Mobarry C., Morris J., McBeon D.L.,
RA McHalov G., Milshina N.V., Mobarry C., Morris J., McBeon D.L.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Svirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Williams S.M., Long F.N., Rubin G.M., Venter J.C.,
RT The genome sequence of Drosophila melanogaster.";
RT Science 287:2185-2195(2000).
RR EMBL; AE003582; AAF51205.1; -.
DR EMBL; AE003582; AAF51205.1; -.
DR FINERSP, P21707; IBVN.
DR FINBAS; PR01656; Synaptotagmin.
DR Finerpro; IPR001656; Synaptotagmin.
DR Finerpro; PR00168; C2; 2.
DR InterPro; PR00168; C2; 2.
DR InterPro; PR00168; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00499; C2_DOMAIN_1; 2.
PROSITE; PS50004; C2_DOMAIN_2; 2.
SEQUENCE 474 AA; 53260 MW; 76F3A34EEABE875B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN
SMART; SM00239; C2; 2.
448
                                                                                                                                                                                                                                                                                                                                                         173
                                                                                                                                                                                                                                                                                                                                                                                                171
                                                                                                                                                                                                                                                                                                                                                                                                                                       113
                                                                                                                                                        328
                                                                                                                                                                                                                                     271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                               PITTSREEFDEIPTVV------GIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYK 52
                                                                                                                                                    GSPSDLENATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVV 172
ASPRRPIAQWHTLKD 462
                                   DYPRRQIAKWHVLCD 424
                                                                                                               PNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEIC
                                                                                                                                                                             ELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDYVKVNLYHAKKRISKKKTHVKKCT
                                                                                                                                                                                                                                     AMNKTLVFAIFDFDRFSKHDQIGEVKVPLCTIDLAQ-TIEEWRDLV--SVEGEGGQEKLG
                                                                                                                                                                                                                                                         IQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGR---G
                                                                                                                                                                                                                                                                                                                                                                                              DMEELTENAE-----EGDEE------DKQSEQKLGRLNFKLEYDFNSNSLAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FVHVLKGVDIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKP 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PVIKKIEHVGEVVTEVIAERTGLPTWGVVAIIILVFLVVFGIIFFCVRRFLKKRRTK----
                                                                          LNPYYNESFSFEVPFEQIQKICLVVTVVDYDRIGTSEPIGRCILGCMGTGTELRHWSDML
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---DGKGKKG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 622.5; DB 5;
; Pred. No. 1.1e-37;
67; M1smatches 144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -- VDMKSVQLLGSAYKEKVQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                              349
                                                                                                                                                                                                                                                                                                                 270
                                                                                                                                                                                                                                                                                                                                                         232
                                                                                                                                                                                                                                                                                                                                                                                              211
                                                                                                                                                      387
                                                                                                                                                                                                                                                                          289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
```

```
Qy
                                                                                   Qy
                                                                                                                  g
                                                                                                                                             δÃ
                                                                                                                                                                             밁
                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                         Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q07529; PRELIMINARY;
Q07529; O1-NOV-1996 (TrEMBLrel. 01,
01-NOV-1996 (TrEMBLrel. 01,
01-JUN-2001 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Inhibition of neurotransmitter release by C2-domain peptides implicates synaptotagmin in exocytosis.";
Nature 363:163-165(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SYNAPTOTAGMIN (FRAGMENT).
Loligo pealeii (Longfin squid).
Eukaryota; Metazoa; Mollusca; Cephalopoda; Coleoidea; Teuthoida;
Myopsida; Loliginidae; Loligo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; X72386; CAA51079.1; ...
HSSP; P21707; 1BYN.
InterPro; IPR000008; C2.
InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin.
Pfam; PF00168; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=93247639;
                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00499; C2_DOMAIN_1; PROSITE; PS50004; C2_DOMAIN_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Transmembrane; Synapse.
 278
               304 LTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVFDIP
                                                                                                                  160
                                                                                                                                                187
                                                                                                                                                                             120
                                                                                                                                                                                                         127
                                                                                                                                                                                                                                       97
                                                                                                                                                                                                                                                                 67
                                                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                                              10
                                                                                                                                                                                                                                                                                                                                                          Local Similarity
les 149; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBUNIT: HOMOTETRAMER (PROBABLE).
SUBCELLULAR LOCATION: SYNAPTIC VESICLES AND SIMILARITY: TO OTHER SPECIES SYNAPTOTAGMIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FUNCTION: MAY HAVE A REGULATORY ROLE IN THE MEMBRANE INTERACTIONS DURING TRAFFICKING OF SYNAPTIC VESICLES AT THE ACTIVE ZONE OF THE SYNAPSE. IT BINDS ACIDIC PHOSPHOLLPIDS WITH A SPECIFICITY THAT REQUIRES THE PRESENCE OF BOTH AN ACIDIC HEAD GROUP AND A DIACYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BACKBONE.
                                                                            RFSRDDIIGEVLIPLSGIELSEGKMLMN-REIIK--RNVRKSSGRGELLISLCYQSTTNT
                                                                                                                                  SMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHFTILSFD
                                                                                                                                                                                                                                                                                                                            EFDEIPTVVGIFSAFGLVFTVSLFAWICCQ---RKSSKSNKTPPYKFVHVLKGVDIYPEN
LTVVILEAKNLKKMDVGGLSDPYVKISLMLNGKRIKKKKTTVKKCTLNPYYNESFAFEVP
                                                                                                                  SGTSDPYVKVYLMPDKKKKFETKVHRKTLNPVFNESFTFKNVPYADITGKTLVFAIYDFD
                                                                                                                                                                                           LEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQ
                                                                                                                                                                                                                                                                LNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPKLF
                                                                                                                                                                                                                                                                                                ELEKLPIWAIILICAGVLLFLVCGTYCCCKRICRRRGKKDGKKGLKGAVDLRGVQLL---
                                                                                                                                                                                                                                                                                                                                                                                                                                   46 68 F
403 AA; 45434 MW;
                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                  46
                                                                                                                                                                             -ESTKS-----EVKLGKLQYSMDYDFQKGELTVNVIQAADLPGMD-M
                                                                                                                                                                                                                                       -GNSIKEKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=8097867;
ton M.P., De Bello W., Chin G.,
                                                                                                                                                                                                                                                                                                                                                        28.2%; Score 621; DB 5; 1
35.6%; Pred. No. 1.1e-37;
tive 71; Mismatches 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
; 74ADF87A0B5FD838 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NN
                                                                                                                                                                                                                                       --DLEELPMN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA
                                                                                                                                                                                                                                                                                                                                                                                    Length 403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHROMAFFIN GRANULES
                                                                                                                                                                                                                                       --MEDNEDA----
                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                  96
                                                                                                                                                246
                                                                                                                                                                             159
                                                          277
                                                                                                                                                                                                                                                                                                                                                           10;
```

B 6

```
9435811
103581
110504
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20701
20
                                         δÃ
                                                                                                             밁
                                                                                                                                                    γ
                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                       δÕ
                                                                                                                                                                                                                                                                                                                        DЪ
                                                                                                                                                                                                                                                                                                                                                                              δδ
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      043581
043581;
01-JUN-1998
01-JUN-1998
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUN-1998 (TrEMBLrel. 06, 01-JUN-1998 (TrEMBLrel. 06, 01-JUN-2001 (TrEMBLrel. 17, SYNAPTOTAGMIN VII (FRAGMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS00499; C2_DOMAIN_1; 2.
PROSITE; PS50004; C2_DOMAIN_2; 2.
NON_TER 1 1
SEQUENCE 418 AA; 47176 MW; 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR000008; C2.
InterPro; IPR002149; LRI.
InterPro; IPR001565; Synaptotagmin.
Pfam; PF00168; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

Cooper P.R., Nowak N.J., Higgins M.J., Church D.M., Show Submitted (DEC-1997) to the EMBL/GenBank/DDBJ databases. EMBL, AF038535; AAB92667.1; -.

HSSP; P21707; 1RSY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PR00360; C2DOMAIN.
PRINTS; PR00399; SYNAPTOTAGMN.
SMART; SM00239; C2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  177
                                                      420
                                                                                                             354
                                                                                                                                                                                                                          294
                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                        236
                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27 VFTVSL-----FAWIC--CQRKSSKSNKTPPYKFVHVLKGVDIYPENLNSKKKFGADD--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match
                                                                                                                                                                                                                                                       TINTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFV
                                                                                                                                                                                                                                                                                                                                                                     FTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTEYGIPYTQIQELALH 239
HQL 416
                                                                                                                                                                                                                                                                                                                                        LQVLDYDRFSRNDPIGEVSIPLNKVDLTQ--MQTFWKDLKPCSDGSGSRGELLLSLCYNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IITVSLSVTVVLCGLCHWCQRKLGKRYK-----
                                                         HVL 422
                                                                                                             FDIPTEKLRETTIIITVMDKDKLSRNDVIGKIYLSWKSGPGEVXHWKDMIARPRQPVAQW
                                                                                                                                                                FDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQIAKW
                                                                                                                                                                                                                       SANSIIVNIIKARNLKAMDIGGTSDPYVKVWLMYKDKRVEKKKTVTMKRNLNPNFNESFA
                                                                                                                                                                                                                                                                                                                                                                                                                                               LPAKD-FSGTSDPFVKIYLLPDKKHKLKTKVKRKNLNPHWNETFLFEGFPYEKVVQRILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----SLTSEMLMLSPGSEEDEAHEGCSRENLGRIQFSVGYNFQESTLTLKIMKAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LFLEGERESVSPESLKSSTSLTSEE-----KQEKLGTLFFSLEYNFERKAFVVNIKEARG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RGRSEKKAIKLPAGGKAVNTAPVPGQTPHDESDRR----TEPRS----SVSDLVN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----KNEVK-----NKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPK 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 615.5; DB 4; Pred. No. 3e-37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         576509854EE2B5FF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches 130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----NSLETVGTPDSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 418;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shows
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              71;
                                                                                                                                                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                                                                               235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11;
```

```
RESULT
OPPAG
ID 9936
ID 9936
ID 9936
ID 97 01
ID 01
ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-JUN-2001 (TrEMBLrel. 17, C
01-JUN-2001 (TrEMBLrel. 17, L
01-JUN-2001 (TrEMBLrel. 17, L
SYNAPTOTAGMIN VIIB.
SYTVII.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 28.0
Best Local Similarity 38.6
Matches 140; Conservative
                                                                                                                                                                                                                                                                                      Q99P36
Q99P36;
01-JUN-2001
01-JUN-2001
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q99P37
Q99P37;
01-JUN-2001
01-JUN-2001
01-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
SUGITAR S., Han W., Butz S., Fernandez-Chacon R., Lao Y., Sudhof T
Sugitar S., Han W., Butz S., Fernandez-Chacon R., Lao Y., Sudhof T
Synaptotagmin VII as a plasma membrane Ca2+ sensorin exocytosis.
Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF336856; ARAO(1451.1; -
SEQUENCE 520 AA; 57441 MW; 409B9696CD46B502 CRC64;
  SEQUENCE FROM N.A.
Sugita S., Han W., Butz
"Synaptotagmin VII as a
Submitted (JAN-2001) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rat
NCBI_TaxID-10116;
                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Rode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SYNAPTOTAGMIN VIIA.
                                                                                                                            NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LFLEGEKESVSPESLKSSTSLTSEE-----KQEKLGTLFFSLEYNFERKAFVVNIKEARG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QNAQGDKRLPAGGK--AVNTAPVPGQTPHDESDRR----TEPRS----SVSDLVN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLENATPK 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JÕH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SANSIIVNIIKARNLKAMDIGGTSDPYVKVWLMYKDKRVEKKKTVTKKRNLNPIFNESFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TINTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LQVLDYDRFSRNDPIGEVSIPLNKVDLTQ--MQTFWKDLKPCSDGSGSRGELLLSLCYNP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -----SLTSEMLMLSPGSEEDEAHEGCSRENLGRIQFSVGYNFQESTLTVKVMKAQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LPAKD-FSGTSDPFVKIYLLPDKKHKLETKVKRKNLNPHWNETFLFEGFPYEKVVQRILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (TrEMBLrel. 17,
1 (TrEMBLrel. 17,
1 (TrEMBLrel. 17,
                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                            Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28.0%;
  S., Fernandez-Chacon R., Lao Y., plasma membrane Ca2+ sensorin exthe EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    70;
                                                                                                                                                                                                                                                                                   Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update;
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 615.5; DB 11;
Pred. No. 4e-37;
0; Mismatches 122;
                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                        ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    122; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 520;
                               exocytosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sudhof T.C.;
                                                         Sudhof T.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31;
                                                                                                                                                            Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7;
```

```
δÃ
Search completed: December 12, 2001, 10:57:39 Job time: 195 sec
                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SQ
                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 28.0%; Score 615.5; DB 11; Length 523; Best Local Similarity 38.7%; Pred. No. 4e-37; Matches 142; Conservative 69; Mismatches 141; Indels 15; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF336857; AAK01452.1; -. SEQUENCE 523 AA; 58161 MW; 78E6D8BE0CBD2DC3 CRC64;
                                                                                                                                                                                                                                                  515 VAQWHQL 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                          356 ELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDYPRRQ 415 | | | | | | | | : : | : | | : | | : | : : | | : | : | | : | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            218 TEPRSSVSDLVNSLTSEMLMLSPGSEEDEAHEGCSRENLGRIQFSVGYNFQESTLTVKVM 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 ATPKLFLEGEKESVSPESLKSSTSLTSEE-----KQEKLGTLFFSLEYNFERKAFVVNIK 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           162 PSEPGSSGKAGRGRWRMVQSHLAAGK----LNLSKLPAGGKAVNTAPVPGQTPHDESDRR 217
                                                                                                                                                                                                                                                                                                                                                              416 IAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      64 PENLINSKKKEGADDKNEVKNKPAVPKNSLHLDLEKRDLINGNFFKTNLKPG-SPSDLEN-- 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
```

•			
•			
	·	•	
	,		
		'	

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
        14
15
16
17
18
19
20
20
21
23
23
24
27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
     605
577
361.5
330.0
310.0
288
288
288
271.1
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.5
182.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq
seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Issued_Patents_AA:*

1: /cgn2_6/ptodata/2

2: /cgn2_6/ptodata/2

3: /cgn2_6/ptodata/2

4: /cgn2_6/ptodata/2

5: /cgn2_6/ptodata/2

6: /cgn2_6/ptodata/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length: 0
length: 2000000000
     100.0
91.1
27.26.4
16.4
115.4
114.1
113.1
113.1
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
110.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          212252 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MAPITTSREEFDEIPTVVGI.....KEICDYPRRQIAKWHVLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-680-121-2
2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            December 12, 2001, 10:53:49; Search time 14.4 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
     140
140
34
33
31
1658
11658
1726
1726
1726
136
1376
                                                                                                                                                                                                                                                                                                                                                                                                           138
138
138
120
120
46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22503292 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapext 0.5
                                                  US-09-036-315-7
US-09-036-315-10
US-08-872-979-7
US-08-872-979-7
US-08-609-049A-17
US-09-036-315-8
US-09-036-315-8
US-09-036-315-25
US-09-036-315-25
US-09-036-315-25
US-09-036-315-25
US-09-036-315-25
US-09-036-315-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-036-315-2
US-09-036-315-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (without alignments)
664.160 Million cell updates/sec
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3, Appli
24, Appl
17, Appl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2, Appli
5, Appli
7, Appli
8, Appli
10, Appli
7, Appli
7, Appli
                                                                                                                                                                                                                                                                                                                                                                                                     Appli
Appli
Appli
                                                                                                                                           Query Match
Best Local Similarity
```

45	44 .	43	42	41	40	39	38	37	36	35	34	ယ	32	ω L	30	29	28
96	97	97	97.5	102.5	109	109	117	125	129.5	129.5	131.5	136	141	144.5	144.5	149.5	149.5
4.4	4.4	4.4	4.4	4.7	5.0	5.0	ა ა	5.7	5.9	5.9	6.0	6.2	6.4	6.6	6.6	6.8	6.8
506	747	747	290	990	990	990	927	25	137	137	799	804	671	1876	1876	137	137
ν	4	ω	N	Ν	N	ω	ω	4	4	N	ω	ω	σ	4	N	4	Ν
US-08-929-501-2	US-09-001-951-18	US-09-035-648-18	US-08-576-626A-34	US-08-645-193B-15	US-08-466-961A-20	US-08-392-625-20	US-08-895-601-6	US-09-036-315-23	US-09-170-996-15	US-08-609-049A-15	US-08-909-954-4	US-08-909-954-2	5266464-2	US-09-170-996-28	US-08-609-049A-28	US-09-170-996-14	US-08-609-049A-14
2, 1	18,	Sequence 18, Appl	Sequence 34, Appl	15,	Sequence 20, Appl	•	6	23,	15,	15,	Sequence 4, Appli	Sequence 2, Appli	Patent No. 5266464	Sequence 28, Appl	Sequence 28, Appl	Sequence 14, Appl	Sequence 14, Appl

ALIGNMENTS

```
COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION NUMBER: US/09/036,315
FILING DATE: 06-MAR-1998
CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: US 60/047,811
ADDILICATION NUMBER: US 60/047,811
; TOPOLOGY: 1; MOLECULE TYPE: US-09-036-315-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 1
US-09-036-315-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/09036315
Patent No. 6218523
GENERAL INFORMATION:
                                                                                                                                                                         APPLICATION NUMBER: US 60/047,811
FILING DATE: 15-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION UNMBER: US 60/041,246
FILING DATE: 07-MAR-1997
ATTORNEY/ACENT INFORMATION:
NAME: Storella, John R.
REGISTRATION NUMBER: 32,944
REFERENCE/DOCKET NUMBER: 018002-000:
TELECOMMUNICATION INFORMATION:
                                                                                                   INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: French, Cynthia K.
APPLICANT: Schneider, Patrick A.
APPLICANT: Yamamoto, Karen K.
TITLE OF INVENTION: Prostate Cancer-Specific Marker
NUMBER OF SEQUENCES: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: Two Embarcac
CITY: San Francisco
                                                                                                                                           TELEFAX:
                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                              LENGTH:
                                                           amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Two Embarcadero
                                                                                425 amino acids
                                                                                                                    (415) 576-0300
(415) TD NO: 2:
                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Townsend and Townsend
                                                                                                                                                              (415)
                     protein
                                                                                                                                                              576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Townsend and Crew LLP Center, Eighth Floor
                                                                                                                                                                                                        018002-000210US
```

100.0%;

Score 2201; DB 4; Pred. No. 4.4e-217;

Length 425;

Matches

```
RESULT 2
US-09-036-315-5
US-09-036-315-5
; Sequence 5, Application US/09036315
; Patent No. 6218523
; Patent No. 6
                                                                                                                                                                                                               COUNTRY: USA

ZIP: 94111-3834

COMPUTER READABLE FORM:
MEDIIM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION NOTE: US/09/036,315
FILING DATE: 06-MAR-1998
CLASSIFICATION: 413
PRICATION NUMBER: US/09/036,315
FRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/047,811
FILING DATE: 15-MAY-1997
PRIOR APPLICATION NUMBER: US 60/047,811
FILING DATE: 15-MAY-1997
PRIOR APPLICATION NUMBER: US 60/041,246
FILING DATE: 07-MAR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Storella, John R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: French, Cynum...
APPLICANT: Schneider, Patrick A.
APPLICANT: Yamamoto, Karen K.
APPLICANT: Yamamoto, Karen K.
APPLICANT: Yamamoto, Karen K.
APPLICANT: Yamamoto, Yama
                                    NAME: Storella, John R.
REGISTRATION NUMBER: 32,944
REFERENCE/DOCKET NUMBER: 018002-000210US
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: Two Embarcac
CITY: San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421 VLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421 VLCDG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 TILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHF 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATPKLFLEGEKESVSPESLKSSTSLTSEEKQEKLGTLFFSLEYNFERKAFVVNIKEARGL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TILSFDRESRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELALHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4:25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 7, Application US/09036315
; Patent No. 6218523
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-036-315-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; NAME/KEY: Protein
; LOCATION: 1..425
; OTHER INFORMATION: /note= "rat synaptotagmin 4 (SYT4)"
US-09-036-315-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (415) 576-0300 INFORMATION FOR SEO ID NO: 5EQUENCE CHARACTERISTICS: LENGTH: 425 amino acids TYPE: amino acid
ZIP: 94111-303.
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                    APPLICANT: French, Cynthia K.
APPLICANT: Schneider, Patrick A.
APPLICANT: Schneider, Patrick A.
APPLICANT: Schneider, Patrick A.
APPLICANT: Yanamotto, Karen K.
APPLICANT: Yanamotto, French K.
APPLICANT: Yanamotto, Karen K.
APPLICANT: Yanamotto, Karen K.
APPLICANT: Yanamotto, Karen K.
APPLICANT: Yanamotto, Karen K.
APPLICANT: Schneider Center, Eighth Floor STATE: Two Embarcadero Center, Eighth Floor STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
                                                                                                                                                                                                                             STATE: C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421 VLCDG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 VTPKLFPETEKEAVSPESLKSSTSLTSEEKQEKLGTLFLSLEYNFEKKAFVVNIKEAQGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 ATPKLFLEGEKESVSPESLKSSTSLTSBEKQEKLGTLFFSLEYNFERKAFVVNIKEARGL 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                hes 382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 DIYPENLNSKKKFGADDKNEVKNKPAVPKNSLHLDLEKRDLNGNFPKTNLKPGSPSDLEN 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSKSNKTPPYKFVHVLKGV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 MAPITTSRVEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRRSAKSNKTPPYKFVHVLKGV 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQST 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETETFYGIPYTQIQELALHF 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPNAVFNELFVF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TVLSFDRESRDDVIGEVLVPLSGIELSDGKMLMTREIIKRNAKKSSGRGELLVSLCYQST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPVFDETFTFYGVPYPHIQELSLHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DIYPENLSSKKKFGGDDKSEAKRKAALPNLSLHLDLEKRDLNGNFPKTNPKAGSSSDLEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91.1%; Score 2006; DB 4;
89.9%; Pred. No. 4.2e-197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>ა</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         240
```

ρy В δõ В Qy DЬ Qy В QΥ DЬ QΥ дδ δÃ рь ρ

301

241 181 181 121

0;

```
; NAME/KEY: Peptide
; LOCATION: 1.121
; OTHER INFORMATION:
; OTHER INFORMATION:
; OTHER INFORMATION:
US-09-036-315-7
                                                                                                                                                                                                                                                                                                                                                 US-08-872-979-8
                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                            Sequence 8, Application US/08872979
Patent No. 6074844
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 120; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: (415) 576-03 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                         APPLICANT: Hillman, Jennifer I.
APPLICANT: Lal, preeti
APPLICANT: Corley, Neil C.
TITLE OF INVENTION: TWO NEW HUMAN MEMBRANE FUSION PROTEINS
NUMBER OF SEQUENCES: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/041,246
FILING DATE: 07-MAR-1997
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/047,811
FILING DATE: 15-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA: APPLICATION NUMBER: US
                                                                                                                                                                                     CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  276 EIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAK 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                          396 A 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             336 KRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGA 395
                                                                                                                                                                                                                                                                                                                                                                                                                        121 A 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Storella, John R. REGISTRATION NUMBER: 32,944 REFERENCE/DOCKET NUMBER: 01
                                                                                                                                      STREET: 3174 POI
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 KRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
COMPUTER: IBM Compatible OPERATING SYSTEM: DOS SOFTWARE: FastSEQ for Wil
                                                                                     COUNTRY: U: ZIP: 94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                MEDIUM TYPE: Diskette
                                                                                                                                                                        ADDRESSEE: Incyte Pharmaceuticals,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 EIIKRNVRKSSGRGELLISLCYQSTINTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAK 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : 121 amino acids
amino acid
                                                                                                                     CA
                                                                                                                                                    3174 Porter Drive
                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
FastSEQ for Windows Version 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5) 576-0300
) 576-0300
7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "Repro-PC-1.0 (PC-20) "B"
internal repeat (amino acid
positions 276-397)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us/09/036,315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       018002-000210US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 605; DB 4
Pred. No. 2e-54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 4; Length 121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                     ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                   δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                    378
                                                                                                                                                                                                                                                                                                                                                                                                       318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204
```

δã Db Qy В Š

B

```
RESULT 5
US-09-036-315-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-872-979-8
                                                                                                                                                                                               Sequence 10, Application US/09036315
Patent No. 6218523
Patent INFORMATION:
APPLICANT: French, Cynthia K.
APPLICANT: Schneider, Patrick A.
APPLICANT: Vamamoto, Karen K.
TITLE OF INVENTION: Prostate Cancer-Specific Marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linea
IMMEDIATE SOURCE:
LIBRARY: GenBan
CLONE: 338658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION IMPORMATION:
TELEPHONE: 415-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                               NUMBER OF SEQUENCES:
COUNTRY: USA
COUNTRY: USA
CTD: 94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 332 YHAKKRISKKKTHVKKCTPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQL 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 216 DPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIEL----SEGKM 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              145 KLQYSLDYDFQNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPDKKKKFETKVHRKTL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        392 VLGAAAEGTGGEHWKEICDYPRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       272 LMNREIIKRNVRKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNL 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           156 TLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTL 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   105 FPKTNLKPGSPSDLENATPKLFLEGEKESVSPESLK---SSTSLT-SEEK-----QEKLG 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: Herewi
                                                                    CITY: San Francisco
STATE: California
                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85 FKKKNKKKGKEKGGKNAINMKDVKDLGKTMKDQALKDDDAETGLTDGEEKEEPKEEEKLG 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 415-845-4166
                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVDFGHVTEEWRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                             FVGYNSTGAELRHWSDMLANPRRPIAQWHTL 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MQNGKRLKKKKTTIKKNTLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LQSAE--KEEQEK---LGDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHL 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                  California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       422 amino acids
                                                                                                            E: Townsend and Townsend and Crew LLP Two Embarcadero Center, Eighth Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenBank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26.4%; Score 581; DB 3; Length 422; 39.9%; Pred. No. 4.3e-51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/872,979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF-0320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  114; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                203
```

```
NAME/KEY: Peptide
LOCATION: 1:113
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
OTHER INFORMATION:
                                                                                                                                                                                                                                                                                                                                                      US-08-872-979-7
US-08-872-979-7
Sequence 7, Application US/08872979
Patent No. 6074844
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING LALE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UNMBER: US 60/047,811
FILING DATE: 15-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/041,246
APPLICATION NUMBER: US 60/041,246
APPLICATION NUMBER: JOHN REPLICATION:
NAME: STORELIA, JOHN R.
REGISTRATION NUMBER: 32,944
REFERENCE/DOCKET NUMBER: 018002-000
TELECOMMUNICATION:
TELEPRAY: (415) 576-0200
TELEPRAY: (415) 576-0200
TELEPRAY: (415) 576-0300
INFORMATION FOR SEQ ID NO: 10:
CEOTIENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                               APPLICANT: Hillman, Jennifer L.
APPLICANT: Lal, preeti
APPLICANT: Lal, preeti
APPLICANT: COrley, Neil C.
TITLE OF INVENTION: TWO NEW HUMAN MEMBRANE FUSION PROTEINS
NUMBER OF SEQUENCES: 8
                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 113 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE:
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             150 KQEKLGTLFFSLEYNFERKAFYVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKYKTR 209
                                                                                                                                                      STREET: 3174 FUL
CITY: Palo Alto
                   COMPUTER: IBM CO
OPERATING SYSTEM:
                                                                                                          COUNTRY: U
ZIP: 94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: FILING DATE: 06-MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity es 113; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS
TOPOLOGY: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 KQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTR 60
                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                    CA
                                                                                                                                                                                           3174 Porter Drive
                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PatentIn Release #1.0, Version #1.30
FastSEQ for Windows Version
                                       IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                               Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      06-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26.2%; Score 577; DB 4; 100.0%; Pred. No. 1.3e-51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "Repro-PC-1.0 (PC-20) "A"
internal repeat (amino acid
positions 150-263)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/09/036,315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      018002-000210US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMMEDIATE SOURCE:

LIBRARY: GenBank
CLONE: 643658
US-08-872-979-7
                                                                                                                                                                                                                                                                                                                    RESULT 7
US-08-872-979-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                         ; Sequence 3, Application US/08872979
; Patent No. 6074844
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 16.4%; Score 361.5; DB 3; Length 355; Best Local Similarity 30.2%; Pred. No. 1e-28; Matches 94; Conservative 62; Mismatches 120; Indels 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO:
                                                                                                                                          APPLICANT: Hillman, Jennifer L.
APPLICANT: Lal, Preeti
APPLICANT: Corley, Neil C.
TITLE OF INVENTION: TWO NEW HUMAN MEMBRANE FUSION PROTEINS
NUMBER OF SEQUENCES: 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 355 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-855-0555
TELEFAX: 415-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
FILING DATE: Herewith
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                   412 PRRQIAKWHVL 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       262 PYFNEAFVFLVPVSQLQSVDLVLAVWARGLQLRTEPVGKVLLGSRASGQPLQHWADMLAH 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206 CFSLRYVPSSGSLTVVVLEARGLN----PGLAEAYVKIQLMLNQRKWKKSKTSSKKGTTT 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              154 KVQLWDFKRFSEHEPLGELQLPLGTVDL------QHVLESWYQLGPPGTTEPEQMGEL
                                                                                                                                                                                                                                                                                                                                                                                                          322 ARRPIAQWHHL 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   352 AVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDY 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179 GLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELAL 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130 EKESVSPESLKSSTSLTSEEK-------QEKLGTLFFSLEYNFERKAFVVNIKEAR 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       292 LISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPN 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      239 HFTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKR-----NVRKSSGRGEL 291
                                                           STREET: 3174 POI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Billings, Lucy J. REGISTRATION NUMBER: 36,749
                      COUNTRY:
                                            STATE:
                                                                              ADDRESSEE: Incyte PharmacosTREET: 3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99 NLKA----EGTADPYAWVSVSTQSGRRHETKVHRGTLSPMFEETCCFL-VPPAELPKATL 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39 DKETVGLGSARNSTTTHLVQPDVDCLEPCSGGDQQWGRLLLSLEYDFGSQEIRVGLRQAG 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS:
94304
                                         CA
                      USA
                                                                                                     Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/872,979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PF-0320 US
```

6,

밁

В

COMPUTER READABLE FORM:

MEDIUM TYPE: Dis COMPUTER: IBM CO OPERATING SYSTEM:

IBM Compatible

DOS

Diskette

```
Qy
                                                                                                                                                                                                                                                                                                                                    Дb
                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dβ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                     US-09-036-315-24
                                                                                                                                                                                                      RESULT
                                                                                                                           Sequence 24, Application US/09036315 Patent No. 6218523 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-
TELECOMMUNICATION INFORMATION:
                                                                   APPLICANT: French, Cynthia K.
APPLICANT: Schneider, Patrick A.
APPLICANT: Yamamoto, Karen K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                   CORRESPONDENCE ADDRESS
                                    NUMBER OF SEQUENCES:
                                                       TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                            352 AAREV 356
                                                                                                                                                                                                                                                                                               412 PRRQI 416
                                                                                                                                                                                                                                                                                                                                                                                                                                            292 LISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKCTPN 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       239 HFTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNREIIKR-----NVRKSSGRGEL 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179 GLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPAFDETFTFYGIPYTQIQELAL 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      130 EKESVSPESIKSSTSL------TSEEKQEKLGTLFFSLEYNFERKAFVVNIKEAR 178
                                                                                                                                                                                                                                                                                                                                      292 PYFNEAFTFLVPFSQVQNVDLVLAVWDRSLPLRTEPVGKVHLGARASGQPLQHWADMLAH 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match 15.4%;
Local Similarity 29.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE: Herew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLONE: 1003941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENGTH:
                                                                                                                                                                                                                                                                                                                                                                       AVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEICDY 411
                                                                                                                                                                                                                                                                                                                                                                                                           CFSLRYVPSSGRLTVVVVLEARGLR----PGLAEPYVKVQLMLNQRKWKKRKTATKKGTAA 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QVQLFNFKRFSGHEPLGELRLALGTVDL-----QHVLEHWYLLGPPAATQPEQVGEL 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DL----MPGGTVDPYARVSVSTQAGHRHETKVHRGTLCPVFDETCCFH-IPQAELPGATL 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DKESVGLGSARGTTTTHLVQPDVDGLESSPGDAQQWGRLQLSLEFDFGSQEIRVGLRQAA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     375 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LUNGNOT12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                415-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  415-855-0555
Townsend and Townsend and Crew LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                single
                                    Prostate Cancer-Specific Marker: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/872,979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PF-0320 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 338.5; DB 3
Pred. No. 2.5e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6
```

```
US-08-609-049A-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-036-315-24
                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 17, Application US/08609049A Patent No. 5948664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLIANT: 15-MA1 ...
PRIOR APPLICATION DATA: 05-60/
APPLICATION NUMBER: US 60/
APPLICATION NUMBER: 07-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (415) 576-03 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: Storella, John R.
                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Floppy disk
COMPUTER: FIBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS_MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
OURFITCH NUMBER. IS /09/600 0400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 01
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                         APPLICANT: Williams, Lew APPLICANT: Molz, Lisa APPLICANT: Chen, Yen-Wen TITLE OF INVENTION: No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199 LPEKKHKVKTRVLRKTLDPAFDETETFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVL 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 60/047,811 FILING DATE: 15-MAY-1997
                                APPLICATION NUMBER: FILING DATE: 29-FEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                 CLASSIFICATION:
                                                                                                                                                                               ZIP: 94111-3834
                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                     STATE:
                                                                                                                                                                                                                                  CITY: San Francisco
                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      amino acid
                                                                                                                                                                                                                   California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Two Embarcadero Center, Eighth Floor
                                                                                                                                                                                                                                                     E: Townsend and Townsend and Crew LLP Two Embarcadero Center, 8th Floor
                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14.1%; Score 310; DB 4; larity 100.0%; Pred. No. 1.1e-24; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-MAR-1998
                                  29-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5) 576-0300
) 576-0300
NO: 24:
                                                                                                                                                                                                                                                                                                                                                                                  Lewis
                                                   US/08/609,049A
                                                                                                                                                                                                                                                                                                            32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US 60/041,246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    us/09/036,315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32,944
                                                                                                                                                                                                                                                                                                                             5948664el PI 3 Kinase Polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   018002-000210US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Version #1.30
                                                                                        Version
                                                                                          #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

```
RESULT 10
US-09-170-996-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-609-049A-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 17, Application US/09170996 Patent No. 6291220 GENERAL INFORMATION:
                                                                                           CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/609,049
FILING DATE: 29-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Dow, Karen B.
REGISTRATION NUMBER: 29,684
REFERENCE/DOCKET NUMBER: 2307K-0637(
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
TELEFAX: 415-326-2422
INFORMATION FOR SEQ ID NO: 17:
SEQUENCE CHARACTERISTICS:
LENGTH: 138 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 415-326-2422 INFORMATION FOR SEQ ID NO: 17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Williams, Lewis, APPLICANT: Molz, Lisa APPLICANT: Molz, Lisa APPLICANT: Molz, Lisa APPLICANT: Chen, Yen-Wen APPLICANT: Chen, Yen-Wen TITLE OF INVENTION: No. 6291220el PI 3-Kinase Polypeptides NUMBER OF SEQUENCES: 32

NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                           COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: DOW, KATEH B.
REGISTRATION NUMBER: 29,684
REFERENCE/DOCKET NUMBER: 23
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 138 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   349 TPNAVENELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEI 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               132 LANPRR 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                409 CDYPRR 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: Two Land CITY: San Francisco
                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72 TLNPYFNESESFEIPFEQIQKYQVVVTVLDYDKLGKNEAIGKIFVGSNATGTELRHWSDM 131
                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13.1%; Score 288; DB 2; Length 138; Similarity 46.8%; Pred. No. 7.6e-22; 59; Conservative 22; Mismatches 45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: Townsend and Townsend and Crew LLP
Two Embarcadero Center, 8th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   415-326-2422
                                                                                                                                                                                                                                                                                                                             us/09/170,996
                                                                                                                                          2307K-063700US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2307K-063700US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

```
Sequence 9. Application US/09036315

Patent No. 621823

GENERAL INFORMATION:
APPLICANT: French, Cynthia K.
APPLICANT: Schneider, Patrick A.
APPLICANT: Yamamoto, Karen K.

APPLICANT: Yamamoto, Frostate Cancer-Specific Marker
ITTLE OF INVENTION: Prostate Cancer-Specific Marker
NUMBER OF SEQUENCES: 27

CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, Eighth Floor
CITY: San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                                                                                                                                                                                                     COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Vers
SOFTWARE: PATENTIN RAPELCATION DATA:
APPLICATION NUMBER: US/09/036,315
FILING DATE: 06-MAR-1998
CLASSIFICATION DATA:
APPLICATION NUMBER: US 60/047,811
FILING DATE: 15-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/041,246
FILING DATE: 15-MAY-1997
PRIOR APPLICATION NUMBER: US 60/041,246
FILING DATE: 07-MAR-1997
ATTORNEY/AGENT INFORMATION:
REGISTRATION NUMBER: 32,944
REFERENCE/DOCKET NUMBER: 32,944
REFERENCE/DOCKET NUMBER: 018002-0002
TELEFONE: (415) 576-0200
TELEFONE: (415) 576-0300
INFORMATION FOR SEQ ID NO: 9:
CEPTIFER FOR SEQ ID NO: 9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-036-315-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                      STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: peptide
FEATURE:
                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 120 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: single TOPOLOGY: linear MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         289 GELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKC 348
|:: || | | | || :|:|:| | || ||||||::| ||: |||| ||1
12 GDICTS;RYVPTAGKLTVCILEAKNLKKMDVGGLSDPYVKIHLMQNGKRLKKKRTTVKKK 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      132 LANPRR 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               349 TPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLGAAAEGTGGEHWKEI 408
  OTHER INFORMATION:
                      NAME/KEY: Peptide
LOCATION: 1..120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  72 TLNPYFNESFSFEIPFEQIQKVQVVVTVLDYDKLGKNEAIGKIFVGSNATGTELRHWSDM 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tch 13.1%; Score 288; DB 4; al Similarity 46.8%; Pred. No. 7.6e-22; 59; Conservative 22; Mismatches 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94111-3834
                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
/note= "synaptotagmin "A" internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                          018002-000210US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 138;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

```
Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 12
US-09-036-315-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; OTHER INFORMATION: US-09-036-315-9
                                                                   ; LOCATION: 1..115
; OTHER INFORMATION:
; OTHER INFORMATION:
US-09-036-315-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 8, Application US/09036315 Patent No. 6218523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 60/047,811
FILING DATE: 15-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/041,246
FILING DATE: 07-MAR-1997
ATTORNEY/AGENT INFORMATION:
NAME: Storella, John R.
REGISTRATION NUMBER: 32,944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 8: SEQUENCE CHARACTERISTICS: LENGTH: 115 amin-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Schneider,
APPLICANT: Yamamoto,
TITLE OF INVENTION: P
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 01
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                         MOLECULE TYPE:
                                                                                                                                                          FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      149 EKQEKLGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKT 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE: 06-MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64 KVHRKTLNPVFNEQFTF-KVPYSELGGKTLVMAVYDFDRFSKHDIIGEFKVPMNTVD 119
                                                                                                                                                                                            TOPOLOGY: 1i
                                                                                                                                                                                                                         TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE:
                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEEEKLGKLQYSLDYDFQNNQLLVGIIQAAELPALD-MGGTSDPYVKVFLLPDKKKKFET 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Schneider, Patrick A. Yamamoto, Karen K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 French, Cynthia K.
                                                                                                                                                                                          linear
                                                                                                                                     Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Townsend and Townsend and Crew LLP OF Embarcadero Center, Eighth Floor
                                                                                                                                                                         peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Prostate Cancer-Specific Marker 27
 11.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repeat (amino acid positions 134-254)"
                                                                                   /note= "synaptotagmin "B" internal
repeat (amino acid positions 268-383)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/09/036,315
                                                                                                                                                                                                                                                                                                                                                           32,944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29;
                                                                                                                                                                                                                                                                                                                                                018002-000210US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 271; DB 4;
Pred. No. 3.4e-20;
 Score 244; DB 4;
Pred. No. 1.8e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 120;
                 Length 115;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-036-315-25
                                                                                                                                                                                  ; MOLECULE TYPE: US-09-036-315-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                 FILING LATER TOWN 435
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/047,811
FILING DATE: 15-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/041,246
APPLICATION DATE: 07-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 25, Application US/09036315
Patent No. 6218523
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                         Matches
                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                             TELEFAX: (415) 576-03
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 46 amino acids
                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 01 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION: NAME: Storella, John R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Yamamoto, Karen K.
TITLE OF INVENTION: Prostate Cancer-Specific Marker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                          259 IPLSGIELSEGKMLMNREIIKRNVRKSSGRGELLISLCYQSTINTL 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        349 TPNAVFNELFVFDIPCEGLEDISVEFLVLDSERGSRNEVIGQLVLG 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     289
                                                                                                                                                                                                                                              TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FILING DATE: 06-MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68 TLNPYYNESFSFEVPFEQIQKVQVVVTVLDYDKIGKNDAIGKVFVG 113
                                                                                                                                                                                                                             STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY:
                                                                                                                                                                                                                                                                                                                          TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHAKKRISKKKTHVKKC 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GDICFSLRYVPTAGKLTVVILEAKNLKKMDVGGLSDPYVKIHLMQNGKRLKKKKTTIKKN 67
                                                                                                       46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      San Francisco
                                                                                                                                                                                                                                              amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: Townsend and Townsend and Crew LLP Two Embarcadero Center, Eighth Floor
                                                                                                                                                                                                                                                                                             (415) 576-0300
TD NO: 25:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Schneider, ruc
Schneider, ruc
Thea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 French,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Floppy disk
IBM PC compati
                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                             (415)
                                                                                                                                                                                                peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cynthia K.
                                                                                                                                                                                                                                                                                                                           576-0200
                                                                                                                      10.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patrick A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/09/036,315
                                                                                                                                                                                                                                                                                                                                                                         32,944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23;
                                                                                                       Score 226; DB; Pred. No. 2.9
0; Mismatches
                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                          018002-000210us
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                        DB 4;
                                                                                                                      .9e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    35;
                                                                                                                                      Length 46;
                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                       0;
```

US-08-609-049A-16; Sequence 16, Application US/08609049A; Patent No. 5948664

GENERAL INFORMATION:

```
RESULT 15
US-09-170-996-16
US-09-170-996-16; Sequence 16, Application US/09170996; Patent No. 6291220
; Patent No. 6291220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TOPOLOGY: li
; MOLECULE TYPE:
US-08-609-049A-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 8.3%; Score 182.5; DB 2; Length 140; Best Local Similarity 32.8%; Pred. No. 5e-11; Matches 39; Conservative 29; Mismatches 48; Indels 3
STALL
COUNTRY: USA
ZIT: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: IBM PC compatib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Williams, Lewis T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 415-326-2422
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Molz, Lisa
APPLICANT: Chen, Yen-Wen
TITLE OF INVENTION: No. 6291220el PI 3-Kinase Polypeptides
NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIAN PC-BS #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/609,049A
FILING DATE: 29-FEB-1996
CLASSIFICATION: 435
CCLASSIFICATION: 435

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: DOW, Karen B.
REGISTRATION NUMBER: 29,684
REFERNEE/DOCKET NUMBER: 230
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-326-2400
TELEPHONE: 415-326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Williams, Lewis T.
APPLICANT: Molz, Lisa
APPLICANT: Molz, Lisa
APPLICANT: Chen, Yen-Wen
TITLE OF INVENTION: No. 5948664el PI 3-Kinase Polypeptides
NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           212 RKTLDPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGK 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          154 LGTLFFSLEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILP--EKKHKVKTRVL 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                            ADDRESSEE: Townsend and Townsend and Crew LLP STREET: Two Embarcadero Center, 8th Floor CITY: San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11 LGALEFSLLYDQDNSSLHCTIIKAKGLKPMDSNGL-ADPYVKLHLLPGASKSNKLRTKTL 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        70 RNTRNPIWNETLVYHGITDEDMQRKTLRISVCDEDKFGHNEFIGETRFSLKKLKPNQRK 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 140 amino acids
TYPE: amino acid
STRANDEDNESS: Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSEE: Townsend and Townsend and Crew LLP
T: Two Embarcadero Center, 8th Floor
San Francisco
San Francisco
California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide
               PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2307K-063700us
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; Gaps
```

```
Дb
                                                                                                      γQ
                                                                                                                                                                                                                              ; TOPOLOGY: linear; ; MOLECULE TYPE: peptide US-09-170-996-16
    Βb
                                     δð
                                                                                                                                       Ouery Match 8.3%; Score 182.5; DB 4; Length 140; Best Local Similarity 32.8%; Pred. No. 5e-11; Matches 39; Conservative 29; Mismatches 48; Indels 3
                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 415-326-2422 INFORMATION FOR SEQ ID NO: 16:
                                                                                                                                                                                                                                                                 TYPE: amino acids
STRANDEDNESS: Single
TOPOLOGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: DOW, Karen B.
REGISTRATION NUMBER: 29,684
REFERENCE/DOCKET NUMBER: 23
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-326-2400
                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS LENGTH: 140 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 29-FEB-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                212 RKTLDPAFDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGK 270
                                                                   70 RNTRNPIWNETLVYHGITDEDMQRKTLRISVCDEDKFGHNEFIGETRFSLKKLKPNQRK 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/09/170,996 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                  2307K-063700US
                                                                                                                                         3; Gaps
```

2;

Search completed: December 12, 2001, 10:54:43 Job time: 54 sec

. .

```
9b_in:LPSYNTTGH
9b_ro:AF336856
9b_ro:AF336857
9b_ro:AF336858
9b_pr:AF038535
9b_ro:AF336869
9b_ro:AF336863
9b_ro:AF336853
9b_ro:AF336852
9b_ro:AF336852
9b_ro:AF336852
9b_ro:AF336852
                                                                                                                                                                                                                                                                                                                                     gb_ro:AF336854
gb_ro:RNU20106
gb_in:D63797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_htg:AC017221
gb_in:AC008029
gb_in:AE003672
gb_htg:AL356483
gb_htg:AL139128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_htg:AC009266
gb_htg:AC087507
gb_htg:AC087507
gb_htg:AC091039
gb_htg:AC068125
gb_ro:AB026808
gb_pr:BC004291
gb_ro:AF375465
gb_pr:AF375465
gb_pr:AF37540
gb_pr:AF37540
gb_pr:AF37540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query: US-09-680-121-2
Query length: 425
Database: GenEmbl:*
Database sequences: 1472140
Database length: -341344837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               옻
                                                                                                                                                                                                                                                                                                                                                                                                                        gb_ro:AB026804
                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_in:AB044144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gb_ro:RNU14398
gb_ro:MMU10355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gb_pat:AR146667
gb_pr:AB037763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Search information block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Command line parameters:
                                                                                                                                                                                                                                                                                                                     gb_in:DROSYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_ro:RATRSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3b_pr:AF299075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -MODEL-frame+p2n.model -DEV=xlp
-Q-/cgn2_1/USPTO_spool/US09680121/runat_12122001_105512_22734/app_query.fasta_1.488
-Q-/cgn2_1/USPTO_spool/US09680121/runat_1212001_105512_22734/app_query.fasta_1.488
-DB=GenEmbl -QFWT-fastap -SUFFIX-p2n.rge -GAPOP=12.000
-GAPORT-4.000 -MINATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000
-QGAPOP+4.500 -QGAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.500
-FGAPEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-DELOP=6.000 -FGAPEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500
-DELOP=6.000 -DELEXT=7.000 -YGAPOP=10.000 -THR_SCORE-pCt
-TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE-pCt
-THR_MAX=100 -THR_MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFMT=pfs
-NORM-ext -MINLEN=0 -MAXLEN=200000000
-USER-US09680121_@CGN1_1_0 -NCPU=6 -ICPU=3 -LONGLOG -NO_XLPXY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 time (sec): 1640.590000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-680-121-2 to: GenEmbl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Results were produced
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Results were produced by the GenCore software, version Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Strd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2201.00
2201.00
2201.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1603.00
1595.00
1167.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1156.
757.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1624.00
1624.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1160
                                  621.00
615.50
615.50
615.50
615.50
615.50
615.50
615.50
615.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Orig
                                                                                                                                                                                                                                                                                                                     . 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2SCOCP
3215.74
3215.69
3215.69
3215.69
12938.17
12938.17
12932.23
12902.23
3272.57
2327.57
2327.43
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
32298.46
322
                                                                                                                                                                                                                                                            961.54
953.92
948.09
938.07
935.58
932.45
937.58
913.53
911.75
901.66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         out_format :
                          7. 40e-45

7. 40e-44

7. 60e-44

11. 30e-44

11. 30e-44

11. 30e-42

11. 30e-42

12. 40e-42

12. 40e-41

12. 40e-41

12. 40e-41

12. 40e-41

13. 40e-41

14. 40e-41

15. 40e-41

16. 40e-41

17. 40e-41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EScore Len
2.5e-171 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .1e-86
.8e-86
.5e-85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .7e-119
.3e-87
.9e-86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .3e-121
.5e-120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .2e-153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .1e-155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .5e-171
.7e-171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .2e-155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .1e-52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3e-121
                  1891 ARIAGGOT Sequence I from paterial 3991 ARIAGGOT Sequence I from paterial 3910 I ARIAGGOT Sequence I from paterial 3910 I ARIAGGOT Sequence I from paterial 3992 I U10355 Mus musculus BALB/c synap 117717 I ACO09266 Homo sapiens chromc 1190550 I APO01797 Homo sapiens chromc 1190522 I ACO97507 Homo sapiens chromc 1192022 I ACO97507 Homo sapiens chromc 119203 I ARIAGGOT Homo sapiens chromc 11920 I ARIAGGOT I ARIAGGOT
        1440
1900
2180
11577
11563
11572
11572
11818
11818
11818
11818
11818
11818
11818
11818
11818
11818
11818
11818
11818
11818
11818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Documentation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF299075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens synapto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gb_ro:MUSSYNB
gb_ro:AF257304
em_pat:E11219
gb_ro:RATSYNII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
PUBMED
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                        alignment_block:
US-09-680-121-2 x AF299075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_documentation_block:
LOCUS AF299075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_ro:RNU20105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_pr:AF299075
                                                                                                                                                                                                                                                                                       Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                144 GGTGGGGATCTTCAGTGCATTTGGCCTGGTCTTCACAGTCTCTCTTTG
34 laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro
                                                                                                           17 lValGlyIlePheSerAlaPheGlyLeuValPheThrValSerLeuPheA
                                                                                                                                                                                 Quality: 2201.00
Ratio: 5.179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF299075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ferguson, G.D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10938284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       513
                                                                                                                                                                                                                                                                                       AF299075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .1671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   605.00
605.00
604.00
604.00
                                                                                                                                                                                                                                                                                     from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Identity: 100.000
```

to: 1671

193 34 143

50

Length: Gaps:

```
Submitted (24-AUG-2000) Pharmacology, University of Washington, Health Sciences J681, Seattle, WA 98195, USA Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The Human Synaptotagmin IV Gene Defines an Evolutionary Break Point between Syntenic Mouse and Human Chromosome Regions but Retains Ligand Inducibility and Tissue Specificity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ferguson, G.D., Chen, X.-N., Korenberg, J.R. and Herschman, H.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 1671)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens synaptotagmin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J. Biol. Chem. 275 (47), 36920-36926 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AF299075.1 GI:11528336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 1671)
                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="18"
/map="18912.3"
94 1371
                                                                                                                                /translation="MAPITTSREEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRKSSK
SNKTPFYKFVHYLKGVDIYEBLLNSKKKEGADDKNEVKNKPAVERNSLHLDLEKRDLN
GNFFRYNLKGGSPSDLEMATPKLFLEGERESYSESEKSKSTSLTSEEKGEKLGTLFSE
LEYNFERKAFVVNIKEARGLPAMDEQSMTSDPYIKMTILPEKKHKVKTRVLRKTLDPA
IIKRRUPKSSGRGELLISLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHA
KKRISKKKTHVKKCTPNAPHRELFYFDIPCEGLEDISVEFLVLDSSRGSRNEVIGQLV
LGAAAEGTGGEHWKEICDYPRRQIAKWHYLCDG"
330 c 372 g 456 t
                                                                                                     FDETFTFYGIPYTQIQELALHFTILSFDRFSRDDIIGEVLIPLSGIELSEGKMLMNRE
                                                                                                                                                                                                                                   /codon_start=1
/product="synaptotagmin IV"
/protein_id="AAG37229.1"
/db_xref="GI:11528337"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1671 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          875.99
871.92
874.52
870.88
873.92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA .... complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1.6e-40
2.7e-40
2.0e-40
3.1e-40
2.1e-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1876
2795
1876
2681
1850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D37793 Mouse mRNA for synap AF257304 Mus musculus synap E11219 Mouse cDNA encoding M64488 Rat synaptotagmin II U20105 Rattus norvegicus sy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-DEC-2000
```

```
1094 CCAAAAAGAGAATCTCCAAGAAGAAGACTCATGTGAAGAAATGCACCCCC 1143
                                                                                                                                                      994
                                                                                                                                                                                                                         334 laLysLysArgIleSerLysLysLysThrHisValLysLysCysThrPro 350
                                                                                                                                                                                                                                                                                                           894
                                                                                                                                                                                                                                                                                                                                                                                  844
                                                                                                                                                                                                                                                                                                                                                                                                                                                             794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  544 CAAGAGAAGCTGGGAACTCTCTTCTTCTCCTTAGAATACAACTTCGAGAG 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        151 GlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluAr 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         344 AGCCAGCTGTGCCAAAGAATTCATTGCATCTTGGATCTTGAAAAGAGAGAT 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                    ThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuProLysSe 317
                                                                                                                                                                                                                                                                                                    TGLNGJYLYSMETLEUMETASNATGGLUTLETLELYSATSASANVALATGL 284
                                                                                                                                                                                                                                                                                                                                                                                                    AspAspIleIleGlyGluValLeuIleProLeuSerGlyIleGluLeuSe 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oAlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleG 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GluLysLysHisLysValLysThrArgValLeuArgLysThrLeuAspPr 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ysProAlaValProLysAsnSerLeuHisLeuAspLeuGluLysArgAsp 100
                                                                         TGATGTGTCCGGACTTTCAGATCCCTATGTCAAAGTGAACCTGTACCATG
                                                                                               rAspValSerGlyLeuSerAspProTyrValLysValAsnLeuTyrHisA 334
                                                                                                                                                ACAAACACTCTAACTGTGGTTGTCTTAAAAGCTCGACATCTGCCTAAATC 1043
                                                                                                                                                                                                                                                                                                                                                                                  GATGATATCATTGGGGAAGTTCTAATTCCTCTCTCGGGAATTGAATTATC 893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 lnGluLeuAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArg 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTCCCCTGAGAGTTTAAAGTCCAGCACTTCCCTTACTTCAGAAGAGAAA 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTGGAGAATGCAACCCCGAAGCTCTTTTAGAAGGGGAAAAAAGAGTCAG 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAATGGCAATTTTCCCAAAACCAACCTCAAACCTGGCAGTCCTTCTGA 443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATGGATCTGCTGTCAGAGAAAATCATCCAAGTCTAACAAGACTCCTCCA 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAATTGGCCCTTGCACTTCACAATTTTGAGTTTTGACAGGTTTTCAAGA 843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGAAGAAGCATAAAGTGAAAACTAGAGTGCTGAGAAAAACCTTGGATCC 743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTTTTGATGAGACCTTTACATTCTATGGGATACCCTACACCCAAATCC 793
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
FEATURES
                                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-680-121-2 x AR146667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name: gb_pat:AR146667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
LOCUS AR146667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                     Align seg 1/1 to: AR146667 from: 1 to: 3891
                                                                                                                                                                                                                                                                                                                                                                                                                       Quality: 2201.00
Ratio: 5.179
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1344 CAAGTGGCACGTGCTCTGTGATGGT 1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1194 TGAAGATATAAGTGTTGAATTTTTGGTTTTGGATTCTGAAAGGGGGTCCC 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1144 AATGCAGTGTTCAATGAGCTGTTTGTCTTTGATATTCCTTGTGAGGGCCT 1193
                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     417 aLysTrpHisValLeuCysAspGly 425
                                                                                                                                 251 CATGGATCTGCTGTCAGAGAAAATCATCCAAGTCTAACAAGACTCCTCCA 300
                                                                                                                                                                                                 151 ATGGCTCCGATCACCACCAGCCGGGAAGAATTTGATGAAATCCCCACAGT 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          384 rgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       367 uGluAspIleSerValGluPheLeuValLeuAspSerGluArgGlySerA 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            351 AsnAlaValPheAsnGluLeuPheValPheAspIleProCysGluGlyLe
                                                                                               51
                               67
                                                                                                                                                    34 laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro 50
                                                                                                                                                                                                                                                                                        1 MetAlaProIieThrThrSerArgGluGluPheAspGluIleProThrVa 17
                                                            uAsnSerLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL 84
AAATAGCAAAAAGAAGTTTGGAGCAGATGATAAAAATGAAGTAAAGAATA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 3891)
French, C.K., Schneider, P.A. and Yamamoto, K.K.
Prostate cancer-specific marker
Patent: US 6218523-A 1 17-APR-2001;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1 from patent US 6218523.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unclassified.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unknown.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AR146667.1 GI:15109856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1229 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="unknown"
a 671 c 788 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .3891
                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Identity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAT
                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-AUG-2001
```

```
1101
                                                                                                                                                                                                                                                                                                 1051
                                                                                                  1201
                                                                                                                                                               1151
                                                                                                                                                                                                                                                                                                                                                              1001
                                                                                                                                                                                                334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           234
                                                                  367
                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                              284
                                                                                                                                                                                                                                                                                                                                                                                                                               951
                                                                                                                                                                                                                                                                                                                                                                                                                                                             267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151 GlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134 alSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGAGAAGCTGGGAACTCTCTTCTTCTTCTTAGAATACAACTTCGAGAG
                                                                                                                                                                                laLysLysArgIleSerLysLysLysThrHisValLysLysCysThrPro 350
                                                                                                                                                                                                                                                 rAspValSerGlyLeuSerAspProTyrValLysValAsnLeuTyrHisA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          lnGluLeuAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OAlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTCCCCTGAGAGTTTAAAGTCCAGCACTTCCCTTACTTCAGAAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCAATGGCAATTTTCCCCAAAACCAACCTCAAACCTGGCAGTCCTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      uGluAspIleSerValGluPheLeuValLeuAspSerGluArgGlySerA 384
                                                                                                                AsnAlaValPheAsnGluLeuPheValPheAspIleProCysGluGlyLe
                                                                                                                                                                                                                                                                                               ACAAACACTCTAACTGTGGTTGTCTTAAAAGCTCGACATCTGCCTAAATC 1100
                                                                                                                                                                                                                                                                                                                ThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuProLysSe 317
                                                                                                                                                                                                                                                                                                                                                              AGTCTTCAGGACGGGGTGAGTTACTGATCTCTCTCTGCTATCAGTCCACC 1050
                                                                                                                                                                                                                                                                                                                                                                             ysSerSerGlyArgGlyGluLeuLleSerLeuCysTyrGlnSerThr 300
                                                                                                                                                                                                                                                                                                                                                                                                                                              rGluGlyLysMetLeuMetAsnArgGluIleIleLysArgAsnValArgL 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTGGAGAATGCAACCCCGAAGCTCTTTTAGAAGGGGAAAAAGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCCAGCTGTGCCAAAGAATTCATTGCATCTGGATCTTGAAAAGAGAGAT
rgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr 400
                                  TGAAGATATAAGTGTTGAATTTTTGGTTTTGGATTCTGAAAGGGGGGTCCC 1300
                                                                                                  AATGCAGTGTTCAATGAGCTGTTTGTCTTTGATATTCCTTGTGAGGGCCT 1250
                                                                                                                                                               CCAAAAAGAGAATCTCCAAGAAGAAGACTCATGTGAAGAAATGCACCCCC 1200
                                                                                                                                                                                                                                TGATGTGTCCGGACTTTCAGATCCCTATGTCAAAGTGAACCTGTACCATG 1150
                                                                                                                                                                                                                                                                                                                                                                                                                               TGAAGGAAAAATGTTAATGAATAGAGAGATCATCAAGAGAAATGTTAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAATTGGCCTTGCACTTCACAATTTTGAGTTTTGACAGGTTTTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTTTTGATGAGACCTTTACATTCTATGGGATACCCTACACCCAAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                               1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          234
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_documentation_block:
LOCUS AB037763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: gb_pr:AB037763
                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
alignment_block:
                                                                                                         alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                           BASE COUNT
                                            Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1301 GAAATGAGGTAATCGGGCAGTTAGTCTTGGGTGCAGCAGCAGCAGAAGGAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           aLysTrpHisValLeuCysAspGly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGTGGCACGTGCTCTGTGATGGT 1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens mRNA f
AB037763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Direct Submission

Submitted (31-JAN-2000) to the DDBJ/EMBL/GenBank databases. Osamu Submitted (31-JAN-2000) to the DDBJ/EMBL/GenBank databases. Osamu Ohara, Kazusa DNA Research Institute, Laboratory of DNA Technolog; 1532-3 Yana, Kisarazu, Chiba 292-0812, Japan (E-mail:cdnainfo@kazusa.or.jp, URL:http://www.kazusa.or.jp/huge/, Tel:+81-438-52-3913, Fax:+81-438-52-3914)

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nagase,T., Kikuno,R., Ishikawa,K.I., Hirosawa,M. and Ohara,O. Prediction of the coding sequences of unidentified human genes. XVI. The complete sequences of 150 new cDNA clones from brain which code for large proteins in vitro DNA Res. 7 (1), 65-73 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 (bases 1 to 3910)
Ohara, O., Nagase, T. and Kikuno, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                     Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone:fj00418.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens brain cDNA to mRNA, clone_lib:pBluescriptII SK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AB037763.1 GI:7243064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 (sites)
                                                                  Ratio:
                                                                                                                                                                                             1221
                                                               2201.00
5.179
                                                                                                                                                                                                                                /translation="kmapittsreefdeiptvvgifsafglvetkgmiccorks
ksnktppykfvhylkgvdiyfseklinskkergaldkuerknellekedl
ugnfpktnlkpcspsbleenafpkflekegalskesvspeslksstsltseekgeklctlef
sleynferkapvvnikearglpamdeosmtsdpyikmtilpekkhkvkthvlkrktldp
afdefffffygilglalhetilsfdrfsbddiggvlfbyglkspykvhvkn
eiikrnvrksgrgeellislcyksttyttplfcegledisveflvldsergsrneviggl
akkriskkkthvkkctpnavfnelfyfdipcegledisveflvldsergsrneviggl
                                                                                                                                                                                           VLGAAAEGTGGEHWKEICDYPRRQIAKWHVLCDG"
679 c 799 g 1211 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <184. .1464
/gene="KIAA1342"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        184. .1464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="KIAA1342"
                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="BAA92580.1"
/db_xref="GI:7243065"
                                                                                                                                                                                                                                                                                                                                                                                                                             /product="KIAA1342 protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Start codon is not identified
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="pBluescriptII SK plus"
/tissue_type="brain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="fj00418"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .3910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bp mRNA
for KIAA1342
                                              Percent
                                         Identity:
                                                                                     Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein,
                                                100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       databases. Osamu
of DNA Technology;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-MAR-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               plus
```

```
Align seg 1/1 to: AB037763 from: 1 to: 3910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-680-121-2 x AB037763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 234 lnGluLeuAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArg 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  217 oAlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201 GluLysLysHisLysValLysThrArgValLeuArgLysThrLeuAspPr 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              184 spGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuPro 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134 alserProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MetAlaprolleThrThrSerargGlucluPheAspGluClaproThrVa 17
| HetAlaprolleThrThrSerargGlucluPheAspGluClaproThrVa 17
| HetAlaprolleThrThrSerargGlucluPheAspGluClaproThrVa 17
| HetAlaprolleThrThrSerargGlucluPheAspGluClaproThrVa 17
| HetAlaprolleThrThrSerargGlucluPheAspGluClaprolleThrSerargGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAspGlucluPheAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  787 GAGAAGAAGCATAAAGTGAAAACTAGAGTGCTGAGAAAAACCTTGGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167 gLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    637 CAAGAGAAGCTGGGAACTCTCTTCTTCTTCTTAGAATACAACTTCGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    151 GlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluAr 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          587 TTTCCCCTGAGAGTTTAAAGTCCAGCACTTCCCCTTACTTCAGAAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              34 laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17 lValGlyIlePheSerAlaPheGlyLeuValPheThrValSerLeuPheA 34
                                                                                                                                                                                                                                                                                                                                           AspAspIleIleGlyGluValLeuIleProLeuSerGlyIleGluLeuSe 267
ysSerSerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThr 300
                                                                                                TGAAGGAAAAATGTTAATGAATAGAGAGATCATCAAGAGAAATGTTAGGA 1036
                                                                                                                                                                                rGluGlyLysMetLeuMetAsnArgGluIleIleLysArgAsnValArgL 284
                                                                                                                                                                                                                                                                                           GATGATATCATTGGGGAAGTTCTAATTCCTCTCTCGGGAATTGAATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAGCAGTCGATGACCTCTGACCCATATATCAAAATGACGATCCTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    uAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATAGCAAAAAGAAGTTTGGAGCAGATGATAAAAATGAAGTAAAGAATA 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACAAGTTTGTGCATGTGCTTAAGGGAGTTGATATTTACCCTGAAAACCT 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATGGATCTGCTGTCAGAGAAAATCATCCAAGTCTAACAAGACTCCTCCA 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    686
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: gb_ro:RATRSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1437 CAAGTGGCACGTGCTCTGTGATGGT 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1087 ACAAACACTCTAACTGTGGTTGTCTTAAAAGCTCGACATCTGCCTAAATC 1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1037 AGTCTTCAGGACGGGGTGAGTTACTGATCTCTCTCTGCTATCAGTCCACC 1086
                                                                                                                                                                              5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1237 AATGCAGTGTTCAATGAGCTGTTTGTCTTTGATATTCCTTGTGAGGGCCT 1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               417 aLysTrpHisValLeuCysAspGly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        384 rgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367 uGluAspIleSerValGluPheLeuValLeuAspSerGluArgGlySerA 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 351 AsnAlaValPheAsnGluLeuPheValPheAspIleProCysGluGlyLe 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 ThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuProLysSe 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GlyGlyGluHisTrpLysGluIleCysAspTyrProArgArgGlnIleA1 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTGGAGAGCACTGGAAAGAGATCTGTGACTACCCCAGGAGACAAATTGC 1436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAATGAGGTAATCGGGCAGTTAGTCTTGGGTGCAGCAGCAGCAAGGAACT 1386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAAGATATAAGTGTTGAATTTTTGGTTTTGGATTCTGAAAGGGGGTCCC 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vician, L., Lim, 1.R., respectively. Fig. 1. F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     L38247.1 GI:598376 immediate early gene; synaptotagmin; synaptotagmin IV. Rattus norwegicus (strain New England Deaconess Hospital) (clone Library: lambda ZAP PC12+ Library (L. Vician and I.K. Lim)) pheochromacytoma cDNA to mRNA.

Rattus norwegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RATRSI 1576 bp mRNA ROD 24-MAY-1995
Rattus norvegicus (clone PCR2) synaptotagmin IV mRNA, complete
L38247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (bases 1 to 1576)
/codon_start=1
/product="synaptotagmin IV"
/protein_id="AAA67327.1"
/db_xref="GI:598377"
                                                                                                                                                                              240.
                                                                                                                                                                                                                                                                                                                                                                                          /organism="Rattus norvegicus"
/strain="New England Deaconess Hospital"
/db_xref="taxon:10116"
/cell_line="PC12"
/clone="PCR2"
                                                                                                                                                                                                                 /tissue_type="pheochromacytoma"
1. .239
                                                                                                                                                                                                                                                                                                                     į
                                                                                                                                                                                                                                                                                                                                                  /clone_lib="lambda ZAP PC12+ library (L. Vician and I.K
                                                                                                                                                                         .1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete cds.
```

tranalation="mapitisavefdiptytugifsapglytyslfamicogrsak swrippykfykgvdiypenlsskkkregddkseakkakalpulsihidlekrdln gnfpkypkagssdlenvtpklfepferekenspeskkskastslisekgeklgylfle glepkynpkagssdlenvtpklfepferekenspeskksstslisekgeklgylfle leynfekkafvunikeagglfamdegsmysdpyikmtlpekkhkvktrvlkktldpy pdftftkgvpyphigelsylsyngltyvylkarhlpksglsdeksdkkmmyre likrnakksgrskeltysgtyngltyvylkarhlpksglsdeykvylvylka kkriskkkthykkkttpnavfnelfyfdiptesleeisveftvldsergsrnevigrly

```
3'UTR
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
    Quality:
    Ratio:
    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-680-121-2 x RATRSI
                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                            490
                                                              184
                                                                                       740
                                                                                                                167
                                                                                                                                                                                         640
                                                                                                                                                                                                                 134
                                                                                                                                                                                                                                          590
                                                                                                                                                                                                                                                                  117
                                                                                                                                                                                                                                                                                                                  101
                                                                                                                                                                                                                                                                                                                                                                                              440
                                                                                                                                                                                                                                                                                                                                                                                                                                               390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               240
              201
                                                                                                                                                               151
                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                   84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa
                                                                                                                                    uAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL
|::::|||||||||||||||:::||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                          TyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GluLysLysHisLysValLysThrArgValLeuArgLysThrLeuAspPr
                                                                                                    gLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetA
                                                                                                                                                                                                                alSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys
                                                                                                                                                                                                                                                                                         LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs
                                                                                                                                                                                                                                                                                                                                           ysProAlaValProLysAsnSerLeuHisLeuAspLeuGluLysArgAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGGCTCCTATCACCACCAGCCGCGTGGAATTCGAAATTCCCACAGT
                                       ATGAACAATCCATGACCTCTGACCCATACATCAAGATGACAATCTTACCA
                                                    spGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuPro 200
                                                                                       GAAAGCATTTGTGGTGAACATCAAGGAAGCCCAGGGCTTACCAGCCATGG
                                                                                                                                                                                       TCTCCCCTGAGAGCTTGAAGTCCAGCACTTCCCTCACTTCAGAGGAGAAA
                                                                                                                                                                                                                                        pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV 134
                                                                                                                                                                                                                                                                                                                                                                                              AAGTAGCAAAAAGAAGTTTGGAGGAGGATGACAAGAGTGAAGCAAAGCGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                              TACAAGTTTGTGCACGTGCTTAAAGGAGTTGATATCTACCCAGAAAACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTGGATCTGCCAGAGAAGATCCGCTAAGTCCAACAAGACTCCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RATRSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2006.00
4.834
97.647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATAEGSGGGHWKEICDFPRRQIAKWHMLCDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4. .1576
394 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length:
Gaps:
Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               384 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89
                                                                                                                                                               167
                                                                                                                                                                                                                150
                                                                                                                                                                                                                                                                                                                  117
                                                                                                                                                                                                                                                                                                                                                                                                                                              439
                                                                                                             184
                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    34
                                     839
                                                                                      789
                                                                                                                                      739
                                                                                                                                                                                         689
                                                                                                                                                                                                                                          639
                                                                                                                                                                                                                                                                                            589
                                                                                                                                                                                                                                                                                                                                            539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             289
```

```
KEYWORDS
SOURCE
                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                seq_documentation_block:
LOCUS RNU14398
                                                                                                                                                                                                                                                                         seq_name: gb_ro:RNU14398
                                                                           REFERENCE
                                                                                                                                                                                                 ACCESSION
TITLE
JOURNAL
MEDLINE
                                                                                                                                      ORGANISM
                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840 GAGAAGAAGCACAAAGTGAAAACCAGAGTGCTGAGGAAGACGCTGGACCC
                                                                                                                                                                                                                                                                                                         aLysTrpHisValLeuCysAspGly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuProLysSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GlyGlyGluHisTrpLySGluIleCysAspTyrProArgArgGlnIleAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               laLysLysArgIleSerLysLysLysThrHisValLysLysCysThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rAspValSerGlyLeuSerAspProTyrValLysValAsnLeuTyrHisA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ysSerSerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uGluAspIleSerValGluPheLeuValLeuAspSerGluArgGlySerA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AsnalaValPheAsnGluLeuPheValPheAspIleProCysGluGlyLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAAGAAGAATCTCTAAAAAGAAGACTCACGTGAAAAAGTGCACTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGATGTGTCTGGACTTTCAGATCCCTACGTCAAAGTGAACCTGTACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          oAlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleG
                                                                                                                                                                                                                                                                                                                                                                     GGTGGGGGCACTGGAAGGAGATCTGTGACTTCCCCAGGAGACAAATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGAAATAAGTGTTGAATTTTTAGTTTTGGATTCTGAAAGGGGATCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACGCAGTGTTCAACGAACTGTTTGTCTTTGATATTCCTTGTGAGAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAAACACGCTCACTGTGGTTGTCTTAAAAGCGCGGCACCTACCGAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTCTTCTGGACGGGGTGAACTTCTGGTCTCCCTCTGTTATCAGTCCACT
                                                                                                                                                                                                  Rattus norvegicus U14398
              Ultrich, B., Li, C., Zhang, J.Z., McM
Geppert, M. and Sudhof, T.C.
Functional properties of multiple
Neuron 13 (6), 1281-1291 (1994)
                                                                                                                                                                                  U14398.1
                                                          Ullrich, B., Li, C.
                                                                                                        Mammalia; Eutheria;
                                                                                                                      Rattus norvegicus
Eukaryota; Metazoa;
                                                                                                                                                      Norway rat.
                                                                                          Rattus
                                                                        (bases 1 to 2060)
                                                                                                                                                                                    GI:550453
                                                                                                                                                                                                                                2060
                                                                                                                                                                                                                synaptotagmin
                                                                                                                                                                                                                               dq
                                                          Zhang, J.Z.,
                                                                                                        Chordata;
Rodentia;
                                                                                                      Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae;
                                                            McMahon, H.,
                                                                                                                                                                                                                IV homolog
                              synaptotagmins in brain
                                                                                                                                                                                                                mRNA,
                                                            Anderson, R.G.
                                                                                                                                                                                                                                                                                                                                                                                                     417
                                                                                                                                                                                                                                                                                                                                                                                                                                                               400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1039
                                                                                                                                                                                                                                                                                                                                                                                                                                 1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          384
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-680-121-2 x RNU14398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Quality: 2006.00
Ratio: 4.834
Percent Similarity: 97.647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to: RNU14398 from: 1 to: 2060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                         518
                                                                                                                                                                                                                                                                      468 AAGTAGCAAAAAGAAGTTTGGAGGAGATGACAAGAGTGAAGCAAAGCGTA 517
117 pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV 134
                                                                                                        101 LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              368 CCTGGATCTGCCAGAGAGATCCGCTAAGTCCAACAAGACTCCTCCA 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             318 GGTGGGCATCTTCAGTGCTTTTTGGCCTGGTCTTCACTGTGTCTCTCTTTG 367
                                                                           568 CTCAATGGCAATTTCCCCAAAACCAACCCCAAAGCTGGCAGCTCTTCTGA 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            268 ATGGCTCCTATCACCACCAGCCGCGTGGAATTCGATGAAATTCCCACAGT 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                       67 uAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17 lValGlyIlePheSerAlaPheGlyLeuValPheThrValSerLeuPheA 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        34 laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (06-SEP-1994) Thomas C. Sudhof, Howard Hughes Medical Institute, University of Texas Southwestern Medical Center, 5323 Harry Hines Boulevard, Dallas, TX 75235-9050, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 (bases 1 to 2060)
Sudhof,T.C.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /product="synaptotagmin_IV homolog"
/product="synaptotagmin_IV homolog"
/protein_ii="AAA68519.1"
/db_xref="G1:550454"
/translation="MAPITTSRYEFDEIPTVGIESAFGLVFTVSLEAWICCGRRSAK
/translation="MAPITTSRYEFDEIPTVGIESAFGLVFTVSLEAWICCGRRSAK
/translation="MAPITTSRYEFDEIPTVGIESAFGLVFTVSLEAWICCGRRSAK
SNKTPPYKFVHVLKGVDIVPENLSSKKKFGGDDKSEAKKSANLPNLSLHLDLEKRDLN
ANFPKTMPKAGSSSDLENVTPKLEPETEREAVSPESLEVSLTSEEKGDKLGTLFLS
LSYNESKAFVUNIXEAGGLPANDEGSMTSDPYIKWTILEBKKHKVTRVLRKTLDPV
PDETTTFTYGVPYPHTQEISLHTFVLSEDFRSEDBVIGELLPKSDVSGLSDPYVKVNLYHA
KRRISKKTHYKKCTPNAVENELFVFDLFCESLEEISVEFLVLDSERGSRNEVIGRLV
LGATABESGGGEHKESICDEPFRGDIAKHMLCDG"

474 c 480 g 547 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .2060
/organism="Rattus norvegicus"
/ob_xref="taxon:10116"
/clone_lib="Strategene lambda ZAP adult rat brain cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="similar to protein encoded by mouse synaptotagmin IV, GenBank Accession Number U10355"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon_start=1/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /tissue_type="brain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length: 425
Gaps: 0
Percent Identity: 89.882
```

	aLysTrpHisValLeuCysAspGly 425 ::: TAAGTGGCATATGCTCTGTGATGGT 1542	417 1518
417 1517	GlyGlyGluHisTrpLySGluIleCysAspTyrProArgArgGlnIleAl 	401 1468
400 1467	rgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr ::: :::	384 1418
384 1417	uGluAspIleSerYalGluPheLeuValLeuAspSerGluArgGlySerA :::	367 1368
367 1367	ASNALAVAlPheASNGluLeuPheValPheAspIleProCysGluGlyLe	351 1318
350 1317	laLysLysArgIleSerLysLysThrHisValLysLysCysThrPro	334 1268
334 1267	raspvalSerGlyLeuSeraspProTyrValLysValAsnLeuTyrHisA 	317 1218
317 1217	ThrasnThrLeuThrValValValLeuLysAlaArgHisLeuProLysSe	301 1168
300 1167	ysSerSerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThr 	284 1118
284 1117	rGluGlyLysMetLeuMetAsnArgGluIleIleLysArgAsnValArgL :::	267 1068
267 1067	AspasplleileGlyGluValLeuIleProLeuSerGlyIleGluLeuSe	251 1018
250 1017	InGluLeuAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArg ::: :::	234 968
234 967	oAlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleG ::: ::: GTGTTTGACGAAACCTTCACATTCTATGGGGTCCCTTATCCCCACATCC	217 918
217. 917	GluLysLysHisLysValLysThrArgValLeuArgLysThrLeuAspPr 	201 868
200 867	spGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuPro	184 818
184 817	GLYSAlaPheValValAsnIleLYSGluAlaArgGlYLeuProAlaMetA :	167 768
167 767	GlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluAr :::	151 718
150 717	alSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys	134 668
667	TCTGGAAAATGTCACCCCAAAGCTCTTTCCGGAGACGGAAAAAGGAGGCCG	618

```
MEDLINE
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
                                                    alignment_scores:
                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
 Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDS
                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gb_ro:MMU10355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (03-JUN-1994) Brian S. Molecular Biology, 340 Kingsland Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perin, M.S., Fried, V.A., Mignery, G.A., Jahn, R. and Sudhof, T.C. Phospholipid binding by a synaptic vesicle protein homologous the regulatory region of protein kinase C Nature 345 (6272), 260-263 (1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  U10355.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mus musculus BALB/c
                                  Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 3992)
Hilbush, B.S. and Morgan, J.I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3 (bases 1 to 3992)
Hilbush, B.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94336712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MMU10355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                90238548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Proc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       third synaptotagmin gene, syt3, in the mouse roc. Natl. Acad. Sci. U.S.A. 91, 8195-8199 (1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (sites)
                                                                                                                         1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               musculus
 1988.00
4.814
97.176
                                                                                                                                                                                                                                                                                                                                                                                                   /product="synaptotagmin 4"
/protein_id="AAA20971.1"
/protein_id="AAA20971.1"
/db_xref=="Gi:499126"
/translation="MAPITTSRVEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRRSAK
/translation="MAPITTSRVEFDEIPTVVGIFSAFGLVFTVSLFAWICCQRRSAK
/KTRIPYKFVHYLKGVDIYPENLSSQKKFGGDDKSEVKGKTALPNLSLHLDLEKRDLN
GNFFFKANFKAGSSSDLENVTPKLFTETEKEANSPESLKSTSLTSEEKQEKLGTLLS
LEYNFEKKAFVUNIKEAGGLPANDEQSWTSDPYIKMTILPEKKHRVKTBVLRKTILDPV
FGETFTFYGITYHIOELSLHFTVLSTDRFFSRDJVIGEVLIPLSGIELSDGKMLMTRE
                                                                                                                                                                                                                           /gene="syt4"
/note="C2A repeat region, amino acids 148-257,
repeat homologous to the protein kinase C C2 dv
in all members of the synaptotagmin family"
/citation=[2]
2556. 2899
                                                                                                                                                 /gene-"syt4"
/note-"C2B repeat region, amino acids 281-394,
repeat homologous to the protein kinase C C2 do
in all members of the synaptotagmin family"
                                                                                                                                                                                                                                                                                                                                                  IIKRNAKKSSGRGELLVSLCYQSTTNTLTVVVLKARHLPKSDVSGLSDPYVKVNLYHA
KKRISKKKTHVKKCTPNAVFNELFVFDIPCESLEEISVEFLVLDSERGSRNEVIGRLV
LGATAEGSGGGHWKEICDFPRRQIAKWHMLCDG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="syt4"
1716. .2993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_
1716. .2
                                                                                                                       /citation=[2]
894 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1716. .2993
/gene="syt4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Mus musculus"
/strain="BALB/c"
/db_xref="taxon:10090"
/clone="p171"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1. .3992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:499125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      type-"brain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dq
   Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    synaptotagmin 4 (syt4) mRNA,
                                                                                                                         g
Identity:
                                    Length:
                                                                                                                         1033
                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hilbush, Roche Institute
St., Nutley, NJ 07110, US
 425
0
89.412
                                                                                                                                                 n family"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complete cds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Murinae;
                                                                                                                                                                                                                                                                                7, internal domain fou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1816
                                                                                                                                                                                                                                                                                  2316
                                                                                                                                                                                                                                                                                                                                                                                        184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34
```

```
alignment_block:
US-09-680-121-2 x MMU10355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1716 ATGCTCCTATCACCACCAGCCGTGGAATTCGAAATTCCCACAGT
                                                                                                                                                                                                                                                                                                                                                                 134 alSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1966 AAACCGCTCTGCCCAACCTTTCCCTGCATCTTGACCTAGAGAAGCGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1866 TACAAGTTTGTGCACGTGCTTAAAGGAGTTGATATCTACCCAGAAAACCT
                                                                                                                                                                                                                                                                                                                2216 GAAAGCATTTGTGGTGAACATCAAGGAAGCCCAGGGCTTACCAGCCATGG
                                                                                                                                                                                                                        201 GluLysLysHisLysValLysThrArgValLeuArgLysThrLeuAspPr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    uAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL
|:::|||:::||||||||||||:::|||||||||:::|
OAlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleG
                                                                                                                                                                                                                                                                         spGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuPro
                                                                                                                                                                                                                                                                                                                           ysProAlaValProLysAsnSerLeuHisLeuAspLeuGluLysArgAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGTAGCCAAAAGAAGTTTGGAGGAGATGACAAGAGTGAAGTGAAGGGTA 1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLe
                                                                                                                                                       TGTTTTTGGTGAAACCTTCACATTCTATGGAATCCCTTATCCCCCACATCC
                                                                                                                                                                                                           GAGAAGAAGCACAGAGTGAAGACCAGAGTGCTCAGGAAGACGCTGGACCC
                                                                                                                                                                                                                                                             ACGAGCAATCCATGACCTCTGACCCGTACATCAAAATGACAATCTTACCA
                                                                                                      AAGAGCTCTCCTTGCACTTTACAGTTCTGAGTTTTGACAGGTTTTCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
5
                           284
                                                                                                                                                                                                                                                                                                                                                                    2215
                                                                                                                                                                                                                                                                                                                                                                                                                       2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1765
                                                   2515
                                                                                                                                                          2415
                                                                                                                                                                                                            2365
                                                                                                                                                                                                                                                              2315
                                                                                                                                                                                                                                                                                                                2265
                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                                                                                                                                                              167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67
                                                                             267
                                                                                                      2465
                                                                                                                               250
                                                                                                                                                                                  234
                                                                                                                                                                                                                                    217
                                                                                                                                                                                                                                                                                        200
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_documentation_block:
LOCUS AC009266 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: gb_htg:AC009266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2816 TGAAGAAATCAGTGTTGAATTCTTGGTTTTGGATTCTGAAAGGGGATCCC 2865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2766 AACGCAGTGTTCAATGAACTGTTTGTCTTTGATATTCCTTGTGAGAGTCT 2815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2716 CCAAGAAGAGAATCTCTAAAAAAGAAGACTCACGTTAAGAAATGCACTCCC 2765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2666 TGATGTGTCTGGACTTTCAGATCCCTACGTCAAAGTGAACCTGTACCATG 2715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                351 AsnAlaValPheAsnGluLeuPheValPheAspIleProCysGluGlyLe 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    334 laLysLysArgIleSerLysLysLysThrHisValLysLysCysThrPro 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            384 rgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 ThrasnThrLeuThrValValLeuLysalaargHisLeuProLysSe 317
                                                                                                                        CE 2 (bases 1 to 171717)

CE 2 (bases 1 to 171717)

RS Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, M., Baker, J., Baldwin, J., Barna, N., Beckerly, R., Benn, J., Brown, A., Castle, A., Cerny, J., Colangelo, M., Collins, S., Collymore, A., Castle, A., Cerny, J., Colangelo, M., Collins, S., Collymore, A., Coke, P., DeArellano, K., Depayre, E., Devon, K., Dewar, K., Donelan, L., Doyle, M., Ferreira, P., FitzHugh, W., Forrest, C., Donelan, L., Gage, D., Galagan, J., Gardyna, S., Gilbert, D., Grant, G., Hagos, B., Heaford, A., Horton, L., Howland, J.C., Jones, C., Kann, L., Karatas, A., Lehoczky, J., Lieu, C., Locke, K., Macdonald, P., Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J., Marquis, N., McEwan, P., McGurk, A., McKernan, K., McLaughlin, J., Maylor, J., Niloff, M., O'Connor, T., O'Donnell, P., Pavilin, B., Peterson, K., Pollara, V., Riley, R., Roberts, D., Roy, A., Severy, P., Stange-Thomann, N., Stojanovic, N., Stone, C., Subramanian, A., Terfaye, S., Torruella Miller, I., Vassiliev, H., Vo, A., Wagner, A., Wheeler, J., Wu, X., Wyman, D., Ye, W. J. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    uGluAspIleSerValGluPheLeuValLeuAspSerGluArgGlySerA 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rAspValSerGlyLeuSerAspProTyrValLysValAsnLeuTyrHisA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTCTTCTGGCCGGGGTGAACTTCTGGTCTCTCTCTGTTATCAGTCCACT 2615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ysSerSerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThr 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAAACACGCTCACTGTGGTGGTCTTAAAAAGCGCGGCACCTACCGAAATC 2665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 171717) Birren, B., Linton, L., Nusbaum, C. and Lander, E. Homo sapiens chromosome 18, clone RP11-481E14 Unpublished
                            Direct Submission
Submitted (11-AUG-1999) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AC009266 171717 bp DNA
HTG 09-WAY-2001
HOMO sapiens chromosome 18 clone RP11-481E14 map 18, WORKING DRAFT
SEQUENCE, 4 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC009266.4 GI:13112247
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP.
    2001 this sequence version replaced gi:7248941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
12 AspGluIleProThrValValGlyIlePheSerAlaPheGlyLeuValPh 28
```

```
alignment_block:
                                                                                                                                                                                                       alignment_scores:
Align seg 1/1 to reverse of: AC009266 from: 1 to: 171717
                                                     US-09-680-121-2 x AC009266/rev
                                                                                                                            Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequencing vector: M13; M7815; 62% of reads
Sequencing vector: M13; M7816; 62% of reads
Chemistry: Dye-primer-amersham; 4% of reads
Chemistry: Dye-primer-amersham; 4% of reads
Chemistry: Dye-terminator B1g Dye; 96% of reads
Assembly program: Phrap; version 0.960731
Consensus quality: 163442 bases at least Q40
Consensus quality: 170935 bases at least Q20
Consensus quality: 171095 bases at least Q20
Insert size: 171417; sum-of-contigs
Ouality coverage: 6.5 in Q20 bases.
**NOTE: This is a 'working draft' sequence. It currently
**consists of 4 contigs. The true order of the pieces
**is not known and their order in this sequence record is
**arbitrary. Gaps between the contigs are represented as
**runs of N, but the exact sizes of the gaps are unknown.
**This record will be updated with the finished sequence
**as soon as it is available and the accession number will
**be preserved.
                                                                                                                            Quality: 1624.00
Ratio: 3.923
nilarity: 30.621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
                                                                                                                                                                                                                                                                                                                  54954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Center project name: L1029
Center clone name: 481_E_14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Center: Whitehead Institute/ MIT Center for Genome Research Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      169275 169374: gap of 100 bp
169275 171717: contig of 2343 bp in length.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39315 gap of 39315 bp in length
39316 39415: gap of 100 bp
39416 40720: contig of 1305 bp in length
40721 40820: gap of 100 bp
40821 169274: contig of 128454 bp in length
                                                                                                                                                                                                                                                                                                         vector_side:right" .
30748 c 29866 g
                                                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_fragment"
169375. .171717
                                                                                                                                                                                                                                                                                                                                                               clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40821.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="RP11-481E14"
/clone_lib="RPCI-11 Human Male BAC"
1. .39315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
1. .171717
                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /chromosome="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .16927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .40720
                                                                                                                         Length: 1352
Gaps: 4
Percent Identity: 30.473
                                                                                                                                                                                                                                                                                                         g 55849 t
                                                                                                                                                                                                                                                                                                               300 others
```

120685 ACAAACACCAAGTTAATATATTGTTACTTTCAGTCAAAACTTTTACTTTG 120636	
283	282
120735 TAAATATATTGCAGTTTTAGTTTTGTGTCAGCCATCACTCTCAGTTGCAA 120686	САВТСТТТ ВТСТ ВССАТТТТССТСТСТСТ В ВССАВТТТТ В ТО В Т В ТО В ТО В ТО В ТО В ТО
283 283	
120785 ATTCTCCTTAGAGTGCCTACTTATACAGCTGTCCCCATATTAGTTTTTGTA 120736	
283 283	elveardaenVal aro
120835 CCCGGCTGGTTAAGTGATACAGTGGGAATAAGGATCTTTCTT	202 SELVIJIEGILUKUSELVIUKUSLIJUSMELKUURELASIRIIGGILIELI 278
283 283	1100/20091111/200900110010110010110044701101100400000001111100101101100110
120885 AAATTAATGACGGTCAAGGTTCAGATACATTCCACAGCTTGTTTGAGACA 120836	24) neaspargrnessrargaspasplielilegiyGluvalleuileproleu 261
283 283	ACCCIACACCARAIICCARAMIIIAACCIIACACIICACAMIIIIAAGII
120935 TTCAGAGCTGAAAACCTGAGAGCTCATTTTGACTGTCTCCTCTCTATTG 120886	101835 101876 1
283 283	AGAAAAAACCIIGGAICCAGCITTTGAIGAGACCITTACATTCIAIGGGAI
TATAAAAATCAATAGACATACTAATTTGTGTTTTTTTAAACAACATAGTGT	ArgLysThrLeuAlspProAlaPheAspGluThrPheThrPheTyrGlyII
283	
121035 GATTTCAACAGTGGTATATCAGAATAACTTCTCTCTATAATACAATGATT 120986	
283 283	**************************************
121085 GACATCAATGAAACAAATTTAACCCCATTTTCACTTTAAATTTGAAACTC 121036	
283 283	GC vI on Droß aMot & corG nG nG corMot #hrsory condroller lot
121135 TTTTGTAGTTATACTACTCTGGTAGTTCTGGGTTTATTAGAAAATAGTAA 121086	
283 283	GluTvrAsnPheGluArgLvsAlaPheValValAsnIleLvsGluAlaAr
121185 ATTATAAATGCTCATCTCTAAATTGTATAGTAGGAAATGAGTCCCCGCTAT 121136	TTACTTCAGAAGAGAAACAAGAGAAGCTGGGAACTCTCTTCTTCTCTTTA
283 283	
121235 TGACTTTCCATGGAATTGCCTTTCAAGGAAGAGGCATCACGTCATTTTCA 121186	0.17 1.1
283 283	ingl wgl int wgg liggerVal gersprogl ingert out weggergordhreert
121285 ATTGAAATTTAAAATTAAATCAATTCTTCCTGAAGATTTGGAAATTGTAT 121236	122 PROGRAMMENT TO THE PROGRAMMENT AND THE PROGRAMMENT OF THE PROGRAMM
283	AICII SHAAAASAAAI II CAAI SOCAAITTI CCCAAAAACCAACCTCAAA
121335 CATAAGCAAGTTAACAAAGAGATTTCAAGGTCAACATAATTGAATTTAAA 121286	spLeuGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLeuLys
283	
121385 ATATTTTGACAGACACTGCTACTTTAAAATACAGGTGAATATTTCTTATT 121336	SASNGluValLysAsnLysProAlaValProLysAsnSerLeuHisLeuA
283	ATTTACCCTGAAAACCTAAATAGCAAAAAGAAGTTTGGAGCAGATGATAA
GGATATTTAGATATCACCTATATAAATACTTTTGTTAATCTCTATCATAA	IleTyrProGluAsnLeuAsnSerLysLysLysPheGlyAlaAspAspLy
	CTAACAAGACTCCTCCATACAAGTTTGTGCATGTGCTTAAGGGAGTTGAT
TGAAATACTCAAAGTGTTTTAATGATGTAAAATAAATAGGCATTCTTTAT	erAsnLysThrProProTyrLysPheValHisValLeuLysGlyValAsp
	122435 CACAGTCTCTCTTTGCATGGATCTGCTGTCAGAGAAAATCATCCAAGT 122386
TAATGGAGATCAAGGGAATAGAACAGATGAAATAAAATTTAATCCATAAC	28 eThrValSerLeuPheAlaTrpIleCysCysGlnArgLysSerSerLysS 45
121303 AAGCITGIACAIAICAICCITACCAIGITTAAITAITAITAAITAIAAIC 121330 283	122485 GATGAAATCCCCACAGTGGTGGGGGATCTTCAGTGCATTTGGCCTGGTCTT 122436
ひかく て おく ひまん マラン・マン・マン・マン・マン・マン・マン・マン・マン・マン・マン・マン・マン・マン	

119785 AATATTCAGATTCACTGTATGATTGGAATGTATTTGACTGCAAATGAGCC 119736	323 323	119835 CATCTGCCTAAATCTGATGTCTCCGGACTTTCAGGTAAGAATGCTTCTGA 119786			 119985 TGAAAGTACACACTTCAAAGTTAAAAAGATAGTTAGTATACACATT 119936	ATAAAAATAAGTAAGATTATATTTAAATGACGATGTTATTTAAACTTTAA	283 283	GGTACTGCTCAAAAGCTTTTAGTTACTCTTCAATTCCTTAGAATATTAAA	283		120185 TITCTAAGTAATGGGTGTGGCCAATTTATTGCCAATTTTAACTTCCTGTA 120136	283 283	120235 AAAGCCAAAAATAATCCTGTGTAGGATATAATTTAAATATCCTTTAAACA 120186	283 283	GCTTTATTACTATTAATAACTTTGAAAAGTAGAGATGTTATTAAAAACCA		120335 GTATGTGTAGTCATTTGACCCAACACATACTCATGCAAAGAATTAGATAA 120286	120385 GGTGCTAAAGAATTTGAAATCAAACTTATCTAATTTTTTGCATGA 120336		120435 TTGGGATCAGAATAATTCTCACTGGGTCTGAGTTCAAATTTCAATATGTC 120386	283 283	120485 AAAGAGGCAGAATTTTAACTCCCATTATCCCTCTGGGCCAGGAATGTAG 120436	283 283	120535 ATGCTTAAGATCAATTCATTCCTTGGCTTAAATGGAAACTTGCTGTTGTG 120486	283 283	TAGCACGCAAAGAAGGACGCTATGACACTGTCCAAAAACAATGCTCTCCA		120635 AATTATTGTATATCTTATCTATTGTCTTTAAAGTACAAATGAAATCTAAG 120586
323		TTTCCATATTCTTCCTTATTTTCAATTCTGTTGACAAGAGAAAATGCCAAG	118985 TATCATTAATTTTTTCCCTTATTCTCTAATTTAGAACTTTTTTCTCTTAT 118936	119035 TGGGTCCAFAGAACATTCTATTTTCTTTCCTTTTTGTGTTACTTCTTTTCC 118986 323	ATTTTTTTCCTTCTATCCTATTCTCTGGAGTAAGTTAATAGTAATCAGAA	323		119185 GGACTCTAAATCCTCATTCGATGGAAAACACAGCCAAAAGTCAGGGAAAT 119136		TGACTAAAGAAATTCATAAAAGTTAAAAACTAAAAAGAATATTGCCATTGT	6AA6CTCAACACTA6GAAACAGAAA6CA		GCAAAAGTAATTGTGATAAAGTAGCATGAACTTAAAATCTACATACTAAC		AGATTAGATTGTGAAGCTAAAATTAACTCATATGGTGCCACCAGAAAAAG	323 323	119435 TAATAATATTATTATTAATTAATGATGGGAGTTGAAAACATGGTCTTAAA 119386		119485 CCTGAGGGGCCTTGTGAGAAACTAGAAATACTTCTTCAGATATCATC 119436	TGATTGGGTATGTTTCTTAAACTGTACAAACTGGACATAATGCTACTCAT		119585 TTAAAATTACCTGAGTTCAAATCCTAACCCTTCCATTCACTAGCAAAATA 119536	323 323	119635 ACGCCAATTTTATGTTGTATAGCACAATGAGAAACAAAATAAGCTACAGT 119586	323 323	119685 TAAAAGTTAGCTTTTAGTTTTATGACTAGCTTTACAAAAAATGAAACAAA 119636	323 323	119735 CACCTACTCTTACTCTTCTATCTTTTCTCTAATACCTTATGTATCTGCTA 119686

```
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_documentation_block: LOCUS AP001797 1
                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_htg:AP001797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             118435 GT 118434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           118485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               118535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                118585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    118735 CCTATGTCAAAGTGAACCTGTACCATGCCAAAAAGAGAATCTCCAAGAAG 118686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      118785 CTCCAGCCCAGTTATGCCATTGTAATGCCTGTTATGTTCCACTGCAGATC 118736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118835 GTCATTGGCATGCCATGATCTCTAAGGGCACTGTTATCTTGATATCAGCT 118786
                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTGACTACCCCAGGAGACAAATTGCCAAGTGGCACGTGCTCTGTGATG 118436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eCysAspTyrProArgArgGlnIleAlaLysTrpHisValLeuCysAspG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          euValLeuAspSerGluArgGlySerArgAsnGluValIleGlyGlnLeu 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         eValPheAspIleProCysGluGlyLeuGluAspIleSerValGluPheL 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LysThrHisValLysLysCysThrProAsnAlaValPheAsnGluLeuPh 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 roTyrValLysValAsnLeuTyrHisAlaLysLysArgIleSerLysLys 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCTTTGATATTCCTTGTGAGGGCCTTGAAGATATAAGTGTTGAATTTT 118586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGACTCATGTGAAGAAATGCACCCCCAATGCAGTGTTCAATGAGCTGTT 118636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTTTTGGATTCTGAAAGGGGGTCCCCGAAATGAGGTAATCGGGCAGTTA 118536
                                                                                                                                                                                                                    URL:http://hgp.gsc.riken.go.jp/, Tel:81-42-778-9923, Fax:81-42-778-9924)
On May 30, 2000 this sequence version replaced gi:7592912
                                                                                                                                                                                                                                                                                              Submitted (11-APR-2000) Masahira Hattori, The Institute of Physical and Chemical Research (RIKEN), Genomic Sciences Center (GSC); Kitasato Univ., 1-15-1 Kitasato, Sagamihara, Kanagawa 228-8555, Japan (E-mail:hattori@sc.riken.go.jp,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 190550)

Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Seog,P., Fujiyama,A., Yada,T., Totoki,Y., Watanabe,H. and Sakaki,Y. Homo sapiens 190,550 genomic DNA of 1812

Published Only in DataBase (2000) In press

2 (bases 1 to 190550)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AP001797
AP001797.2 GI:8117469
                                                                                                                                                                                                                                                                                                                                                                                                  Hattori,M., Ishii,K., Toyoda,A., Taylor,T.D., Hong-Seog,P., Fujiyama,A., Yada,T., Totoki,Y., Watanabe,H. and Sakaki,Y. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens chromosome 18 clone RP1 DRAFT SEQUENCE, 27 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens DNA, clone:RP11-748I20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HTG; HTGS_PHASE1; HTGS_DRAFT.
                  Center project name: HumDraft18
Center clone name: RP11-748I20
                                                                                                                                                   Center: RIKEN Genomic Sciences Center(GSC)
Center code: RIKEN
                                                                                            Contact: hattori@gsc.riken.go.jp
                                                                                                                   Web site: http://hgp.gsc.riken.go.jp/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              190550 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    90550 bp DNA HTG 30-MAY-2000 chromosome 18 clone RP11-748I20 map 18q12, WORKII
                                                                                                                                                                                                     Genome Center
Summary Statistics
                                                                                                                                                                                                                                                                      go.jp,
Tel:81-42-778-9923,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            118486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WORKING
```

```
Sequencing vector: PCR products; 100% of reads Chemistry: Dye-terminator ET-amersham; 100% of reads Assembly program: Phrap; version 0.990329
Consensus quality: 178641 bases at least Q40
Consensus quality: 184743 bases at least Q30
Consensus quality: 186891 bases at least Q20
Insert size: 187950; sum-of-contigs
Quality coverage: 4.84x in Q20 bases; sum-of-contigs
```

NOTE: This is a 'working draft' sequence. It currently consists of 27 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved

1 16718 contig of 16718 bp in length

:	!			•		07 - Y	(7p	nce upo
	eng	in	dq	90	of.	contig	190550	189487
	length	'n	dq	1090	of	nti	8938	88
	eng	in	ďď	81	Of	nti	8819	8638
	eng	in	đđ	63	of	nti	8628	8465
	eng	in	ďq	15	0f	nti	8455	8139
	eng	ij	þ	84	0f	nti	8129	8045
	eng	ij	þ	17	of.	nti	8035	7817
	eng	in	đđ	20	of	nti	7807	7487
	eng	in	фþ	03	ō.	nti	7476	6973
	eng	'n	ďď	85	Of.	nti	6963	6578
	eng	'n	ďď	10	0f	nti	6568	6057
	eng	'n	đđ	70	of.	nti	6047	5577
	eng	'n	đđ	36	of	nti	5567	5130
	eng	'n	ģ	74	0 f	nti	5120	4546
	eng	in	đđ	39	0f	nti	4536	3897
	eng	ĺn	ď	35	0f	nti	3887	2952
	eng	in	ďď	72	of.	nti	2942	2170
	eng	in	ďq	70	of	nti	2160	1490
	eng	in	ďď	26	of	nti	1480	0653
	eng	'n	þþ	27	of	nti	0643	716
	eng	'n	ďď	92	of	nti	706	713
	eng	in	ďď	104	of	nti	703	599
	eng	in	ďď	604	of	nti	589	985
	eng	in	ďď	404	of	onti	975	570
	eng	in	ď	505	of	onti	560	055
	eng	in	ďď	63	of	μ.	044	681
	eng	ij	g	671	ot	onti	671	

* NOTE: This is a 'working draft' sequence. It currently consists of 27 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.

De preserved.

1 16718: contig of 16718 bp in length
16819: 30449: contig of 13631 bp in length
30450: 30549: gap of 100 bp
30550: 45607: contig of 15058 bp in length
45608: 45707: gap of 100 bp
45708: 59752: contig of 14045 bp in length
59753: 59852: gap of 100 bp
59753: 75994: contig of 16042 bp in length
75995: 87034: contig of 100 bp in length
75995: 87034: contig of 100 bp in length
87035: 87134: gap of 100 bp in length
87135: 97062: contig of 928 bp in length
97063: 97162: contig of 928 bp in length
106436: 106535: gap of 100 bp
116436: 106535: gap of 100 bp
116536: 114800: contig of 8265 bp in length
114801: 114900: gap of 100 bp
1121601: 21700: gap of 100 bp
1121701: 122422: contig of 7722 bp in length

```
misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                    misc_feature
                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                      misc_feature
                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      129423 129522: gap of 100 bp 129523 138872: contig of 9350 bp in length 138873 145365: contig of 6393 bp in length 145366 145465: gap of 100 bp 145466 151207: contig of 5742 bp in length 151308 155673: contig of 5742 bp in length 15574 155773: gap of 100 bp 155774 160475: contig of 4762 bp in length 160476 165575: gap of 100 bp 165681 165780: contig of 100 bp 165681 165780: gap of 100 bp 165681 165780: contig of 5105 bp in length 169731 169630: contig of 5039 bp in length 169731 174760: contig of 5039 bp in length 174770 174869: gap of 100 bp 178073 178172: gap of 100 bp 180352 180451: gap of 100 bp 181295: contig of 2179 bp in length 181296 181395: contig of 1317 bp in length 181296 181395: contig of 1317 bp in length 181296 181395: contig of 1317 bp in length 186583 186522: contig of 1317 bp in length 186583 186382: gap of 184653 184582: contig of 1310 bp 18296: gap of 18144 bp in length 189387 189386: contig of 1800 bp in length 189387 189386: contig of 1804 bp in length 189387 189386: contig of 
                                                                                                                                                                                                             /note="assembly_fragment"
129523. .138872
/note="assembly_fragment"
138973. .145365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="assembly_fragment"
87135. .97062
/note="assembly_fragment"
160576. .165680
/note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_fragment" 106536. .114800
                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_fragment"
97163. .106435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
16819. .30449
/note="assembly_fragment"
30550. .45607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="18"
/map="18q12"
                                                                         /note="assembly_fragment"
155774. .160475
                                                                                                                       /note="assembly_fragment"
151308. .155673
                                                                                                                                                               /note="assembly_fragment"
145466. .151207
                                                                                                                                                                                                                                                                                                          /note="assembly_fragment clone_end:SP6 vector_side:right"
121701. .129422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
114901. .121600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone="RP11-748120"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      e="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .87034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .59752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
Quality: 1624.00
Ratio: 3.923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-680-121-2 x AP001797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Align seg 1/1 to: AP001797 from: 1 to: 190550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9706
                                                                                                                                                                                                                                                                                                                                                                                9456 CTAACAAGACTCCTCCATACAAGTTTGTGCATGTGCTTAAGGGAGTTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9406 CACAGTCTCTCTTTGCATGGATCTGCTGAGAGAAAATCATCCAAGT 9455
                                                                                                                                                                                                                                                                                                                                          128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9506 ATTTACCCTGAAAACCTAAATAGCAAAAAGAAGTTTGGAGCAGATGATAA 9555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                   178 gGlyLeuProAlaMetAspGluGlnSerMetThrSerAspProTyrIleL 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          62 IleTyrProGluAsnLeuAsnSerLysLysLysPheGlyAlaAspAspLy 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45 erasnLysThrProProTyrLysPheValHisValLeuLysGlyValAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28 eThrValSerLeuPheAlaTrpIleCysCysGlnArgLysSerSerLysS 45
                                                                                                                                                                                             GluTyrAsnPheGluArgLysAlaPheValValAsnIleLysGluAlaAr
             TGGCTTGCCAGCCATGGATGAGCAGTCGATGACCTCTGACCCATATATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_fragment"
188297. .189386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_fragment clone_end:T7 vector_side:right"
181396. .184552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
189487...190550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
184653. .186282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly 169731. .174769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="assembly_fragment"
186383. .188196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_fragment"
178173. .180351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              174870. .178072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       165781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_fragment"
180452. .181295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .169630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent Identity: 30.473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  y_fragment'
                                                                                                                                                                                                     . 9805
                                                                                                                                                                                                                                                                                                  9755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9505
                                                                                                            9855
                                                                                                                                                       178
                                                                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9605
                  9905
```

FEATURES

10805	756 GACATCAATGAAACAAATTTAACCCCATTTTCACTTTAAATTTGAAACTC	
283	283	28
10755)706 TTTTGTAGTTATACTACTCTGGTAGTTCTGGGTTTATTAGAAAATAGTAA	1070
283	283	28
10705	0556 ATTATAAATGCTCATCTCTAAATTGTATAGTAGGAAATGAGTCCCGCTAT	1065
283	283	28
10655)606 TGACTTTCCATGGAATTGCCTTTCAAGGAAGAGGCATCACGTCATTTTCA	1060
283	283	28
10605)556 ATTGAAATTTAAAATTAAATCAATTCTTCCTGAAGATTTGGAAATTGTAT	1055
283	283	28
10555)506 CATAAGCAAGTTAACAAAGAGATTTCAAGGTCAACATAATTGAATTTAAA	
283	283	
10505)456 ATATTTTGACAGACACTGCTACTTTAAAATACAGGTGAATATTTCTTATT	1045
283	283	
10455)406 GGATATTTAGATATCACCTATATAAATACTTTTGTTAATCTCTATCATAA	1040
283	283	28
10405)356 TGAAATACTCAAAGTGTTTTAATGATGTAAAATAAATAGGCATTCTTTAT	1035
283	283	28
10355)306 TAATGGAGATCAAGGGAATAGAACAGATGAAATAAAATTTAATCCATAAC	1030
283	283	28
10305	256 AAGCTTGTACATATCATCCTTACCATGTTTAATTATTATTAATTA	
283	283	28
10255	206 CAATCTTTTATGTAGCATTTTGGTGTCTAAGGAATTTTTATTAATATAT	1020
283	283	28
283 10205	278 eLysargasnValarg	27 1015
278 10155	262 SerGlyIleGluLeuSerGluGlyLysmetLeumetAsnArgGluIleII 	26 1010
261 10105	245 heaspargPheSerargaspaspIleIleGlyGluValLeuIleProLeu 	υ + -
245 10055	228 eProTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerP 	1000
228	212 ArgLysThrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyIl 	21 995
211 9955	195 ysMetThrIleLeuProGluLysLysHisLysValLysThrArgValLeu 	0 0

283		283
11705	${\tt TTTCTAAGTAATGGGTGTGGCCAATTTATTGCCAATTTTAACTTCCTGTA}$	11656
283		283
11655	AAAGCCAAAAATAATCCTGTGTAGGATATAATTTAAAATATCCTTTAAACA	11606
283		283
11605	GCTTTATTACTATTAATAACTTTGAAAAGTAGAGATGTTATTAAAAAACCA	11556
283		283
11555	GTATGTGTAGTCATTTGACCCAACACATACTCATGCAAAGAATTAGATAA	11506
283		283
11505	GGTGCTAAAGAATTTGAAATCAAATCAAACTTATCTAATTTTTTGCATGA	11456
283		283
11455	TTGGGATCAGAATAATTCTCACTGGGTCTGAGTTCAAATTTCAATATGTC	11406
283		283
11405	AAAGAGGCAGAATTTTAACTCCATTATCCCTCTGGGCCAGGAATGTAG	11356
283		283
11355	ATGCTTAAGATCAATTCATTCCTTGGCTTAAATGGAAACTTGCTGTTGTG	11306
283		283
11305	TAGCACGCAAAGAAGGACGCTATGACACTGTCCAAAAACAATGCTCTCCA	11256
283		283
11255	AATTATTGTATATCTTATCTATTGTCTTTAAAGTACAAATGAAATCTAAG	11206
283		283
11205	ACAAACACCAAGTTAATATATTGTTACTTTCAGTCAAAACTTTTACTTTG	11156
283		283
11155	TAAATATATTGCAGTTTTAGTTTTGTGTCAGCCATCACTCTCAGTTGCAA	11106
283		283
11105	ATTCTCCTTAGAGTGCCTACTTATACAGCTGTCCCATATTAGTTTTTGTA	11056
283		283
11055	CCCGGCTGGTTAAGTGATACAGTGGGAATAAGGATCTTTCTT	11006
283		283
11005	AAATTAATGACGGTCAAGGTTCAGATACATTCCACAGCTTGTTTGAGACA	10956
283		283
10955	TTCAGAGCTGAAAACCTGAGAGCTCATTTTGACTGTCTCCTCTCCTATTG	10906
283		283
10905	TATAAAAATCAATAGACATACTAATTTGTGTTTTTTAAACAACATAGTGT	10856
283		283
10855	GATTTCAACAGTGGTATATCAGAATAACTTCTCTCTATAATACAATGATT	, 10806
283		283

12456 AGATTAGATTGTGAAGCTAAAGTTAACTCATATGGTGCCACCAGAAAAG 14303 323		CACCTACTCTTACTCTTCTATCTTTTCTCTAATACCTTATGTATCTGCTA TAAAAGTTAGCTTTTAGTTTTATGACTAGCTTTACAAAAAATAAGCTACAAA ACGCCAATTTTATGTTGTATAGCACAATGAGAAACAAAATAAGCTACAGT TTAAAAATTACCTGAGTTCAAATCCTAACCCTTCCATTCACTAGCAAAATA		11706 GTACCAAACAAGACCACAAGATGGCAGGCAGTGGTTTTTCAAGCAGCGAT 11755 283
425 ly 425 13406 GT 13407 seq_name: gb_htg:AC087507 seq_documentation_block:		13006 GTCATTGGCATGCCATGATCTCTAAGGGCACTGTTATCTTGATATCAGCT 1305 324	TATCATTAATTTTTTCCCTTATTCTCTAATTTAGAACTTTTTTCTCTTAT TTTCCATATTCTTCCTTATTTTCAATTCTGTTGACAAGAGAAATGCCAAG TTTTATCCATATTTTTCTGTTGTTTGACTTATTTTCCTGACACACAC	12606 TGACTAAAGAAATTCATAAAAGTTAAAAAGTAAAAGAATATTGCCATTGT 12655 323

```
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Lehoczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P., Marquis, N., Matthews, C., McCarthy, M., McEwan, P., McKernan, K., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Mlenga, V., Murphy, T., Naylor, J., Nguyen, C., Norbu, C., Norman, C.H., O'Connor, T., O'Donnell, P., O'Neil, D., Oliver, J., Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Raymond, C., Retta, R., Ribedack, M., Riley, R., Rise, C., Rogov, P., Roman, J., Rosetti, M., Roy, A., Santos, R., Schauer, S., Schupback, R., Seaman, S., Severy, P., Sougnez, C., Spencer, B., Stange-Thomann, N., Stojanovic, N., Strauss, M., Tavis, N., Trigilio, J., Vassiliev, H., Viel, R., Vo, A., Wilson, B., Wu, X., Wyman, D., Ye, W. J., Young, G., Zainoun, J., Zembek, L., Zimmer, A. and Zody, M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (05-JAN-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On May 4, 2001 this sequence version replaced gi:12957877. All repeats were identified using RepeatMasker: Smit, A.F.A. & Green, P. (1996-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Smit, A.F.A. & Green, F. (1750 1777)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
http://ftp.genome.center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dodge,S., Faro,S., Ferreira,P., FitzHugh,W., Gage,D., Galagan,J., Gardyna,S., Ginde,S., Goyette,M., Graham,L., Grand-Pierre,N., Hagos,B., Heaford,A., Horton,L., Hulme,W., Iliev,I., Johnson,R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Birren, B., Linton, L., Nusbaum, C., Lander, E., Allen, N., Anderson, S. Barna, N., Bastien, V., Boguslavkiy, L., Boukhgalter, B., Brown, A., Camarata, J., Campopiano, A., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 192022)
Birren,B., Linton,L., Nusbaum,C. and Lander,E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC087507.3 GI:13940683
HTG; HTGS_PHASE1; HTGS_DRAFT; HTGS_FULLTOP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Jones, C., Karatas, A., LaRocque, K., Lamazares, R., Landers, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens chromosome 18, clone RP11-748I20
                                                                                                                                                                                                                                                                                                                               arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                 NOTE: This is a 'working draft' sequence. It currently consists of 12 contigs. The true order of the pieces is not known and their order in this sequence record is
                                                                                                                                                                                                                                                          as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 192022)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chemistry: Dye-terminator Big Dye; 100% of reads Assembly program: Phrap; version 0.960731
Consensus quality: 186183 bases at least Q40
Consensus quality: 189224 bases at least Q30
Consensus quality: 199237 bases at least Q20
Insert size: 194000; agarose-fp
Insert size: 194200; agarose-fp
Quality coverage: 6.1 in Q20 bases; agarose-fp
Quality coverage: 6.2 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Center project name: L12322
Center clone name: 748_I_20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequencing vector: Plasmid; n/a; 100% of reads
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: sequence_submissions@genome.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Center code: WIBR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Center: Whitehead Institute/ MIT Center for Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Web site: http://www-seq.wi.mit.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ·----- Project Information
8180: contig of 1275 bp in length 8181 8280: gap of 100 bp 8281 9283: contig of 1003 bp in length 9284 9383: gap of 100 bp
                                                                                                                                                                                                                    6805: contig of 6805 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Severy, P.,
```

```
alignment_block:
US-09-680-121-2 x AC087507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                  Align seg 1/1 to: AC087507
                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                            183467 GATGAAATCCCCACAGTGGTGGGGATCTTCAGTGCATTTGGCCTGGTCTT 183516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
28 eThrValSerLeuPheAlaTrpIleCysCysGlnArgLysSerSerLysS
                                                                                                                                                 12 AspGluIleProThrValValGlyIlePheSerAlaPheGlyLeuValPh
                                                                                                                                                                                                                                                                                                                                                                                                                              Quality: 1624.00
Ratio: 3.923
milarity: 30.621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125448 125547: gap of 100 bp 125548 157506: contig of 31959 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             157507 157606:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      86614 86713: gap of 100 bp
86714 125447: contig of 38734 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28642 28741: gap of 100 bp
28742 43445: contig of 14704 bp in length
43446 43545: gap of 100 bp
43546 62579: contig of 19034 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62580 62679: gap of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9384 11168: contig of 1785 pp in remything 11169 11268: gap of 100 bp 11269 13778: contig of 2510 bp in length 13779 13878: gap of 100 bp 13779 13878: gap o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
62680. .86613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                vector_side:right"
34828 c 35147 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_fragment
clone_end:T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                86714.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43546.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="assembly_fragment"
28742. .43445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8281.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6906.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   clone_end:SP6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157607. .192022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vector_side:left"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:9606"
/chromosome="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="RP11-748I20"
/clone_lib="RPCI-11 Human Male BAC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note="assembly_fragment"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="assembly_fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 6805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            192022: contig of 34416 k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    86613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           178: gap of 100 bp 28641: contig of 14763 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .11168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .125447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .62579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 2864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .157506
                                                                                                                                                                                                                                                      from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Identity: 30.473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                35147 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             p of 100 bp
contig of 23934 bp in length
                                                                                                                                                                                                                                                      to: 192022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60815 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   φd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1101 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in length
```

183517 CACAGTCTCTCTTTGCATGGATCTGCTGTCAGAGAAAATC

185317 AATTATTGTATATCTTATCTATTGTCTTTAAAGTACAAATGAAATCTAAG 185366	TAATGGAGATCAAGGGAATAGAACAGATGAAATAAAATTTAATCCATAAC
283	
185267 ACAAACACCAAGTTAATATATTGTTACTTTCAGTCAAAACTTTTACTTTG 185316	
283 283	283 283
185217 TAAATATATTGCAGTTTTAGTTTTGTGTCAGCCATCACTCTCAGTTGCAA 185266	184317 CAATCTTTTATGTAGCATTTTGGTGTCTAAGGAATTTTTATTAATATGAT 184366
283	283 283
ATTCTCCTTAGAGTGCCTACTTATACAGCTGTCCCATATTAGTTTTTGTA	184267 CAAGAGAAATGTTAGGGTAATTTATTTTCAGTGCTTAAAGTATTTATAAA 184316
283	
185117 CCCGGCTGGTTAAGTGATACAGTGGGAATAAGGATCTTTCTT	
283 283	
185067 AAATTAATGACGGTCAAGGTTCAGATACATTCCACAGCTTGTTTGAGACA 185116	
283 283	heAspArqPheSerArqAspAspTleTleGlvGluValLeuTleProLeu
185017 TTCAGAGCTGAAAACCTGAGAGCTCATTTTGACTGTCTCCTCTCCTATTG 185066	
283 283	eProTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerP 245
184967 TATAAAAATCAATAGACATACTAATTTGTGTTTTTTTAAACAACATAGTGT 185016	
283 283	212 ArgLysThrLeuAspProAlaPheAspGluThrPheThrPheTvrGlvTl
184917 GATTTCAACAGTGGTATATCAGAATAACTTCTCTCTATAATACAATGATT 184966	AAATGACGATCCTCCCAGAGAAGAAGCATAAAGTGAAAACTAGAGTGCTG
283 283	195 ysMetThrIleLeuProGluLysLysHisLysValLysThrArqValLeu
184867 GACATCAATGAAACAAATTTAACCCCATTTTCACTTTAAATTTGAAACTC 184916	TGGCTTGCCAGCCATGGATGAGCAGTCGATGACCTCTGACCCATATATCA
283 283	178 gGlyLeuProAlaMetAspGluGlnSerMetThrSerAspProTyrIleL
184817 TTTTGTAGTTATACTACTCTGGTAGTTCTGGGTTTATTAGAAAATAGTAA 184866	
283 283	162 GluTvrAsnPheGluArgLvsAlaPheValValAsnTleLvsGluAlaAr
184767 ATTATAAATGCTCATCTCTAAATTGTATAGTAGGAAATGAGTCCCGCTAT 184816	
283 283	145 euThrSerGluGluLvsGlnGluLvsLeuGlvThrLeuPhePheSerLeu 161
184717 TGACTTTCCATGGAATTGCCTTTCAAGGAAGAGGCATCACGTCATTTTCA 184766	AGGGGAAAAAGAGTCAGTTTCCCCTGAGAGTTTAAAGTCCAGCACTTCCC
283 283	inGlvGlilvGGliGaarValGarDroGliGaarToitvaGaarGardhagar 1/5
184667 ATTGAAATTTAAAATTAAATCAATTCTTCCTGAAGATTTGGAAATTGTAT 184716	183767 CUTGGCAGTCCTCGATCCGAAGCCCCGAAGCCTCTTTTTTAAGA 183816
283 283	
184617 CATAAGCAAGTTAACAAAGAGATTTCAAGGTCAACATAATTGAATTTAAA 184666	
283 283	95 spleuGluLvsArgAspleuAspGlvAspPheDroLvsThrAspLeuLvs
184567 ATATTTTGACAGACACTGCTACTTTAAAATACAGGTGAATATTTCTTATT 184616	AAATGAAGTAAAGAATAAGCCAGCTGTGCCAAAGAATTCATTGCATCTGG
283 283	78 sAsnGliValIvsAsnIvsDroAlaValDroIvsAsnSerIeiiVisIeiia Qs
184517 GGATATTTAGATATCACCTATATAAATACTTTTGTTAATCTCTATCATAA 184566	ATTTACCCTGAAAACCTAAATAGCAAAAAGAAGTTTGGAGCAGATGATAA
283 283	IleTvrProGluAsnLeuAsnSerLvsLvsLvsPheGlvAlaAsnAsnLv
184467 TGAAATACTCAAAGTGTTTTAATGATGTAAAATAAATAGGCATTCTTTAT 184516	CTAACAAGACTCCTCCATACAAGTTTGTGCATGTGCTTAAGGGAGTTGAT
283 283	45 erAsnLysThrProProTyrLysPheValHisValLeuLysGlyValAsp 61
	183517 CACAGTCTCTCTTTGCATGGATCTGCTGTCAGAGAAAATCATCCAAGT 183566

324AspP 325	323 323
187117 GTCATTGGCATGCCATGATCTCTAAGGGCACTGTTATCTTGATATCAGCT 187166	86217 CACCTACTCTTACTCTTCTATCTTTTCTCTAATACCTTATGTATCTGCTA 186266
323 323	323
187067 TTTTATCCATATTTTTCTGTTGTTTTGACTTATTTTCCTGGTAACCACAT 187116	AATATTCAGATTCACTGTATGATTGGAATGTATTTGACTGCAAATGAGCC
323	323 323
187017 TTTCCATATTCTTCCTTATTTTCAATTCTGTTGACAAGAGAAATGCCAAG 187066	CATCTGCCTAAATCTGATGTGTCCGGACTTTCAGGTAAGAATGCTTCTGA
323 323	313 HisLeuProLvsSerAspValSerGlvLeu.Ser
186967 TATCATTAATTTTTTCCCTTATTCTCTAATTTAGAACTTTTTTCTCTTAT 187016	230 YSLYTSTINSTINIT HEALIN VALTATIOLISM HANDS HAND SIZ
323 323	veffyrd agarffhraendhri eildheile alve i teil eildheile anna
186917 TGGGTCCATAGAACATTCTATTTTCTTTTCTTTTGTGTTTACTTCTTTTCC 186966	TCTCTTTCTGCAGAAGTCTTCAGGACGTGAGTTACTGATCTCTCTC
323 323	Tus SerSerGlvArgGlvGluIeJleSerIeJ
186867 ATTTTTTTCCTTCTATCCTATTCTCTGGAGTAAGTTAATAGTAATCAGAA 186916	ТGAAAGTACACACTTCAAAGTTAAAAGATAGAAATACTTAATATCACATT
323 323	
186817 AGACTCACCCAAAGTCATACAAGTCAGTAAAGCTACATGTTGTCTAATAT 186866	ataaaaataagtaagattatatttaaatgacgatgttatttaaactttaa
323 323	283
186767 GGACTCTAAATCCTCATTCGATGGAAAACACAGCCAAAAGTCAGGGAAAT 186816	85867 GGTACTGCTCAAAAGCTTTTAGTTACTCTTCAATTCCTTAGAATATTAAA 185916
	283 283
TGACTAAAGAATTCATAAAAGTTAAAACTAAAAAGAATATTGCCATTGT	85817 GTACCAAACAAGACCACAAGATGGCAGGCAGTGGTTTTTCAAGCAGCGAT 185866
	283 283
AN 1 PHICHCHARMANNOC I CHARCHCI ABBAHARCHBAHARBCHANNI CCHACC I B	85767 TTTCTAAGTAATGGGTGTGGCCAATTTATTGCCAATTTTAACTTCCTGTA 185816
CECO 200 Enveronment of the control	283 283
	85717 AAAGCCAAAAATAATCCTGTGTAGGATATAATTTAAATATCCTTTAAACA 185766
GCAAAAGTAATTGTGATAAAGTAGCATGAACTTAAAATCTAACATACTAAC	283 283
323	85667 GCTTTATTACTATTAATAACTTTGAAAAGTAGAGATGTTATTAAAAAACCA 185716
186567 AGATTAGATTGTGAAGCTAAAATTAACTCATATGGTGCCACCAGAAAAAG 186616	
323 323	GTATGTGTAGTCATTTGACCCCAACACATACTCATGCAAAGAATTAGATAA
186517 TAATAATATTATTATTATTTAATGATGGGAGTTGAAAACATGGTCTTAAA 186566	
323 323	מפו מבו העומים וומטטטו בטטטו בטטטר ואובות ואווו וומבטומט מו מבו מבו מבו מבו מבו מבו מבו מבו מבו
186467 CCTGAGGGGCCTTGTGAGAACTAGAAATACATACTTCTTCAGATATCATC 186516	מ סחיים של מינים של מ
323 323	
186417 TGATTGGGTATGTTTCTTAAACTGTACAAACTGGACATAATGCTACTCAT 186466	ТТGGGATCAGAATAATTCTCACTGGGTCTGAGTTCAAATTTCAATATGTC
323 323	
186367 TTAAAATTACCTGAGTTCAAATCCTAACCCTTCCATTCACTAGCAAAATA 186416	AAAGAGGCAGAGAATTTTAACTCCATTATCCCTCTGGGCCAGGAATGTAG
323 323	
186317 ACGCCAATTTTATGTTGTATAGCACAATGAGAAACAAAATAAGCTACAGT 186366	85417 ATGCTTAAGATCAATTCATTCCTTGGCTTAAATGGAAACTTGCTGTTGTG 185466
	283 283
IAAAAAIIAACIIIIAAIIIIAIGACIAACIIIACAAAAAAIIAAAAAA	85367 TAGCACGCAAAGAAGGACGCTATGACACTGTCCAAAAACAATGCTCTCCA 185416
	283 283

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_documentation_block:
LOCUS AC091039 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  seq_name: gb_htg:AC091039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                187467 CTGTGACTACCCCAGGAGACAAATTGCCAAGTGGCACGTGCTCTGTGATG 187516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 187317 TGTCTTTGATATTCCTTGTGAGGGCCCTTGAAGATATAAGTGTTGAATTTT 187366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 187517 GT 187518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         187367 TGGTTTTGGATTCTGAAAGGGGGTCCCGAAATGAGGTAATCGGGCAGTTA 187416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         187267 AAGACTCATGTGAAGAAATGCACCCCCAATGCAGTGTTCAATGAGCTGTT 187316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 187217 CCTATGTCAAAGTGAACCTGTACCATGCCAAAAAGAGAATCTCCAAGAAG 187266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    187167 CTCCAGCCCAGTTATGCCATTGTAATGCCTGTTATGTTCCACTGCAGATC 187216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      358 eValPheAspIleProCysGluGlyLeuGluAspIleSerValGluPheL 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           342 LysThrHisValLysLysCysThrProAsnAlaValPheAsnGluLeuPh 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   425 ly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          392 ValLeuGlyAlaAlaAlaGluGlyThrGlyGlyGluHisTrpLysGluIl 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      325 roTyrValLysValAsnLeuTyrHisAlaLysLysArgIleSerLysLys 341
                                                                                                       CE 2 (bases) I to 159135)

2 (bases) I to 159135)

Barna, N., Bastlen, V., Boguslavkiy, L., Boukhgalter, B., Brown, A., Barna, N., Bastlen, V., Boguslavkiy, L., Boukhgalter, B., Brown, A., Camarata, J., Campopiano, A., Chang, J., Choepel, Y., Colangelo, M., Collins, S., Collymore, A., Cooke, P., DeArellano, K., Dewar, K., Diaz, J.S., Dodge, S., Farro, S., Ferreira, P., Fitzhugh, W., Gage, D., Galagan, J., Gardyna, S., Ginde, S., Goyette, M., Craham, L., Hulme, W., Iliev, I., Johnson, R., Jones, C., Karatas, A., Lakocque, K., Iliev, I., Johnson, R., Jones, C., Karatas, A., Lakocque, K., Iliev, I., Johnson, R., Jones, C., Karatas, A., Lakocque, K., Lamazares, R., Landers, T., Lehoczky, J., Levine, R., Liu, G., MacLean, C., Macdonald, P., Marquis, N., Matthews, C., McGarthy, M., McBean, C., McGernan, K., McPheeters, R., Meldrim, J., Meneus, L., Mihova, T., Mlenga, V., Murphy, T., Naylor, J., Nayyen, C., Norbu, C., Norbu, C., Norbu, C., Norbu, C., Norbu, C., Pierre, N., Pollara, V., Raymond, C., Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Raymond, C., Resta, R., Rieback, M., Riley, R., Rise, C., Rogov, P., Roman, J., Peterson, K., Phunkhang, P., Pierre, N., Pollara, V., Raymond, C., Rosetti, M., Roy, A., Santos, R., Schauer, S., Schupback, R., Seaman, S., Schauer, S., Schupback, R., Seame, S., Subramanian, A., Talamas, J., Tesfaye, S., Sthottfed (24. Mar. 2001) Whitehead Toeting, Ye, W.J., Young, G., Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  eCysAspTyrProArgArgGlnIleAlaLysTrpHisValLeuCysAspG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCTTGGGTGCAGCAGCAGAAGGAACTGGTGGAGAGCACTGGAAAGAGAT 187466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              euValLeuAspSerGluArgGlySerArgAsnGluValIleGlyGlnLeu 391
            Submitted (24-MAR-2001) Whitehead Institute/MIT Center for Genome Research, 320 Charles Street, Cambridge, MA 02141, USA On Aug 11, 2001 this sequence version replaced qi:14336523.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 159135)
Birren,B., Linton,L., Nusbaum,C. and Lander,E.
Homo sapiens chromosome 18, clone RP11-403A5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACO91039 159135 bp DNA HTG 11-AUG-2001
HOMO Sapiens chromosome 18 clone RP11-403A5 map 18, *** SEQUENCING
IN PROGRESS ***, 3 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC091039.3 GI:15148197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HTGS_PHASE1; HTGS_FULLTOP; HTGS_ACTIVEFIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               159135 bp
        2001 this sequence version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
US-09-680-121-2 x AC091039/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
111 sProGlySerProSerAspLeuGluAsnAlaThrProLysLeuPheLeuG 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality: 1603.00
Ratio: 3.881
milarity: 30.525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               49874 a
```

```
Align seg 1/1 to reverse of: ACO91039 from: 1 to: 159135
150647 TATTTACCCTGAAAACCTAAATAGCAAAAAGAAGTTTGGAGCAGATGATA 150598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      150697 TCTAACAAGACTCCTCCATACAAGTTTGTGCATGTGCTTAAGGGAGTTGA 150648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                150597 AAAATGAAGTAAAGAATAAGCCAGCTGTGCCAAAGAATTCATTGCATCTG 150548
                                                        95 AspLeuGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLeuLy 111
                                                                                                                                                                                                                                                                                                78 ysAsnGluValLysAsnLysProAlaValProLysAsnSerLeuHisLeu 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 pIleTyrProGluAsnLeuAsnSerLysLysLysPheGlyAlaAspAspL 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45 SerAsnLysThrProProTyrLysPheValHisValLeuLysGlyValAs 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     * NOTE: This is a 'working draft' sequence. It currently consists of 3 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   All repeats were identified using RepeatMasker:
Smit, A.F.A. & Green, P. (1996-1997)
http://ftp.genome.washington.edu/RM/RepeatMasker.html
Genome Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center: Whitehead Institute/ MIT Center for Genome Research Center code: WIBR Center code: WIBR Center Charles that the code with the code wit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 69068: contig of 69068 bp in length
69069 69168: gap of 100 bp
69169 73453: contig of 4285 bp in length
73454 73553: gap of 100 bp
73554 159135: contig of 85582 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="RP11-403A5"
/clone_lib="RPCI-11 Human Male BAC"
28773 c 28100 g 52128 t 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="18"
/map="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
1. .159135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Identity: 30.451
```

149548	AATTGAAATTTAAAATTAAATCAATTCTTCCTGAAGATTTGGAAATTGTA	149597
283		283
149598	AAGAGATTTCAAGGTCAACAT	149647
283		283
149648	;ACACTGCTACTTTAAAATACAGGTGAATATTTCTTA	149697
283		283
149698	.TATCACCTATATAAATACTTTTGTTAATCTCTATCAT	149747
283		283
149748	.TACTCAAAGTGTTTTAATGATGTAAAATAAATAGGCATTCTTT	149797
283		283
149798	'GGAGATCAAGGGAATAGAACAGATGAAATAAAATTTAATCCATA	149847
283		283
149848	TTGTACATATCATCCTTACCATGTTTAATTATTATTAATTA	149897
283		283
149898	ATGTAGCATTTTGGTGTCTAAGGAATTTTTATTAATAT	149947
283		283
149948	TAATTTATTTTCAGTGCTTAAAGTATTTATA	149997
283	eLysArgAsnValArg	278
278 149998	uSerGlyIleGluLeuSerGluGlyLysMetLeuMetAsnArgGluIleI CTCGGGAATTGAATTATCTGAAGGAAAAATGTTAATGAATAGAGAGATCA	261 150047
261 150048	PheAspArgPheSerArgAspAspIleIleGlyGluValLeuIleProLe	245 150097
244 150098	leProTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSer 	228 150147
228 150148	UATGLYSThrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyI 	211 150197
211 150198	LysMetThrI1eLeuProGluLysLysHisLysValLysThrArgValLe	195 150247
194 150248	rgGlyLeuProAlaMetAspGluGlnSerMetThrSerAspProTyrIle	178 150297
178 150298	uGluTyrAsnPheGluArgLysAlaPheValValAsnIleLysGluAlaA 	161 150347
161 150348	LeuThrSerGluGluLysGlnGluLysLeuGlyThrLeuPhePheSerLe	145 150397
144 150398	luGlyGluLysGluSerValSerProGluSerLeuLysSerSerThrSer 	128 150447
150448	ACCTGGCAGTCCTTCTGATCTGGAGAATGCAACCCCGAAGCTCTTTTTAG	150497

148648	CGGTGCTAAAGAATTTGAAATCAAATCAAACTTATCTAATTTTTTTGCATG	148697
283		283
148698	GTTGGGATCAGAATAATTCTCACTGGGTCTGAGTTCAAATTTCAATATGT	148747
283		283
148748	GAAAGAGGCAGAATTTTAACTCCATTATCCCTCTGGGCCAGGAATGTA	148797
283		283
148798	AATGCTTAAGATCAATTCATTCCTTGGCTTAAATGGAAACTTGCTGTTGT	148847
283		283
148848	GTAGCACGCAAAGAAGGACGCTATGACACTGTCCAAAAAACAATGCTCTCC	148897
283		283
148898	GAATTATTGTATATCTTATCTATTGTCTTTAAAGTACAAATGAAATCTAA	148947
283		283
148948	AACAAACACCAAGTTAATATATTGTTACTTTCAGTCAAAACTTTTACTTT	148997
283		283
148998	ATAAATATATTGCAGTTTTAGTTTTGTGTCAGCCATCACTCTCAGTTGCA	149047
283		283
149048	TATTCTCCTTAGAGTGCCTACTTATACAGCTGTCCCATATTAGTTTTTGT	. 149097
283		283
149098	ACCCGGCTGGTTAAGTGATACAGTGGGAATAAGGATCTTTCTT	149147
283		283
149148	GAAATTAATGACGGTCAAGGTTCAGATACATTCCACAGCTTGTTTGAGAC	149197
283		283
149198	TTTCAGAGCTGAAAACCTGAGAGCTCATTTTGACTGTCTCCTCTCTATT	149247
283		283
149248	TTATAAAAATCAATAGACATACTAATTTGTGTTTTTTTAAACAACATAGTG	149297
283		283
149298	CGATTTCAACAGTGGTATATCAGAATAACTTCTCTCTATAATACAATGAT	149347
283		283
149348	AGACATCAATGAAACAAATTTAACCCCCATTTTCACTTTAAATTTTGAAACT	149397
283		283
149398	TTTTTGTAGTTACACTACTCTGGTAGTTCTGGGTTTATTAGAAAATAGTA	149447
283		283
149448	AATTATAAATGCTCATCTCTAAATTGTATAGTAGGAAATGAGTCCCGCTA	149497
283		283
149498	TTGACTTTCCATGGAATTGCCTTTCAAGGAAGAGGCATCACGTCATTTTC	149547
283		283

323 1477 323	323	323	323	148197 TGCTATCAGTCCACAAACACTCTAACTGTGGTTGTTTAAAAGCTCG 148148 312 9HisLeuProLysSerAspValSerGlyLeuSer		AATAAAAATAAGTAAGATTATATATTTAAATGACGATGTTATTTAAACTTTA ATGAAAGTACACACTTCAAAGTTAAAAAAGATAGAAATACCTTATATCACAT	CCAAACAAGACCACAAGATGGCAGGCAGTGGTTTTTCAAGCAG	AGTATGTGTAGTCATTTGACCCAACACATACTCATGCAAAGAATTAGATA AGCTTTATTACTATTAATAACCTTTGAAAAGTAGAGATGTTATTAAAAACC AAAAAGCCAAAAATAATCCTGTGTAGGATATAAATTTAAATATCCTTTAAAC ATTTCTAAGTAATGGGTGTGGGCCAATTTATTGCCAATTTTAACCTTCCTGT	283 283
374 eLeuValLeuAspSerGluArgGlySerArgAsnGluValIleGlyGlnL 391	AGAAGACTCATGTGAAGAAATGCACCCCCAATGCAGTGTTCAATGAGCTG PheValPheAspIleProCysGluGlyLeuGluAspIleSerValGluPh	147097 CTCTCCAGCCCAGTTATGCCATTGTAATGCCTGTTATGTCCACTGCAGA 147048 324 pProTyrValLysValAsnLeuTyrHisAlaLysLysArgIleSerLysL 341	AGTTTTATCCATATTTTTCTGTTGTTTTTGACTTATTTTCCTGGTAACCAC	ATTAATTTTTTCCCTTATTCTCTAATTTAGAACTTTTTTCTCTT CATATTCTTCCTTATTTCAATTCTGTTGACAAGAGAAATGCCA	323	147447 ATAGACTCACCCAAAGTCATACAAGTCAGTAAAGCTACATGTTGTCTAAT 147398 323	147547 TGTGACTAAAGAAATTCATAAAAGTTAAAACTAAAAAGAATATTGCCATT 147498 323	147747 CTAATAATATTATTATTTAATGATNGGGAGTTGAAAACATGGTCTTA 147698 323	

SOURCE

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: gb_htg:AC068125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               146747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           146847 TAGTCTTGGGTGCAGCAGCAGGAAGGAACTGGTGGAGAGCACTGGAAAGAG 146798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGT 146744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pGly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                    Consensus quarter.
Insert size: 187000; agarose-fp
Insert size: 168718; sum-of-contigs
Quality coverage: 4.51 in Q20 bases; agarose-fp.
Quality coverage: 4.52 in Q20 bases; sum-of-contigs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MO 63108,
On Aug 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HTG Homo sapiens chromosome 18 clone RP11-403A5, SEQUENCE, 16 unordered pieces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequencing vector: M13; 100%
Sequencing vector: plasmid; 0%
Chemistry: Dye-primer ET; 100% of reads
Chemistry: Dye-terminator Big Dye; 0% of reads
Chemistry: Dye-term
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
Submitted (28-APR-2000) Genome Sequencing Center, Washington
University School of Medicine, 4444 Forest Park Parkway, St. Louis,
MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Center project name: H_NH0403A05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Web site:http://genome.wustl.edu/gsc/index.shtml
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Center: Washington University Genome Sequencing Center Center code: WUGSC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The sequence of Homo sapiens clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 170218) Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 (bases 1 to 170218)
Waterston, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HTG; HTGS_PHASE1; HTGS_DRAFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC068125.5 GI:9887816
                                                                                                                                                                                                                                    NOTE: This is a 'working draft' sequence. It currently consists of 16 contigs. The true order of the pieces is not known and their order in this sequence record is arbitrary. Gaps between the contigs are represented as runs of N, but the exact sizes of the gaps are unknown. This record will be updated with the finished sequence as soon as it is available and the accession number will be preserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aug 24,
                                                                             8711
8811
18253
18353
27042
27142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2000 this sequence version replaced gi:9739343
                                                                          8710:
8810:
18252:
18352:
18352:
27041:
27141:
33915:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genome Center -----
0: contig of 8710 bp in length
0: gap of unknown length
2: contig of 9442 bp in length
2: gap of unknown length
1: contig of 8689 bp in length
1: gap of unknown length
5: contig of 6774 bp in length
5: contig of 9710 bp in length
5: contig of 9710 bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-AUG-2000
WORKING DRAFT
                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                 alignment_block:
                                                                                                                                                                      alignment_scores:
                           US-09-680-121-2 x AC068125/rev
                                                                                              Percent Similarity:
                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                             misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            misc_teature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   misc_feature
                                                                                           Quality: 1595.00
Ratio: 3.853
milarity: 30.621
                                                                                                                                                                                                                                                                    52643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            135642
135742
137571
137671
137671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               141628
147794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155900
156000
162403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70434
                                                                                                                                                                                                                                                                                                                 /note="assembly_name:Contig8"
162503. .170218
                                                                                                                                                                                                                                                                                                                                                                /note="assembly_name:Contig7"
156000. .162402
                                                                                                                                                                                                                                                                                                                                                                                                                /note="assembly_name:Contig6"
147894. .155899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             135742.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="assembly_name:Contig16"
70434. .83083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      34016.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vector_side:left"
8811. _18252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="assembly_name:Contig10
clone_end:SP6
                                                                                                                                                                                                                                                             /note="assembly_name:Contig9"
30665 c 30050 g 55356 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note="assembly_name:Contig14"
43826. .56004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="assembly_name:Contig13"
34016. .43725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9606"
/chromosome="18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig4"
137671. .141527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_name:Contig19"
135742. .137570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="assembly_name:Contig17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note="assembly_name:Contig15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone="RP11-403A5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="assembly_name:Contig5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note="assembly_name:Contig18"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'note="assembly_name:Contig12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="assembly_name:Contig11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .8710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          162502: gap of unknown 170218: contig of 7716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .33915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .135641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .99044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .27041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .70333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .147793
                                                                                                Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of contig gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gap of
contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         contig
gap of
contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gap of contig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gap of unknown contig of 8006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         f unknown length
g of 36497 bp in
f unknown length
g of 1829 bp in 10
f unknown length
g of 3857 bp in 10
f unknown length
                                                                                           Identity: 30.399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            f unknown
g of 6403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g of 6166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown length
of 15861 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown length of 14229 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of 12179 bp in unknown length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of 12650 bp in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown length
                                                                                                                       Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bp in length
length
bp in length
length
length
bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bp in length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     length
                                                                                                                                             1352
                                                                                                                                                                                                                                                                    1504 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length
```

73336 TAAATATATTGCAGTTTTAGTTTTGTGTCAGC	
283	83
73386 ATTCTCCTTAGAGTGCCTACTTATACAGCTGT	74286 CAAGAGAAATGTTAGGGTAATTTATTTCAGTGCTTAAAGTATTTATATAA 74237
283	370 ATTERATED TO A TERMORANANA DITANTANTANTANTANTANTANTANTANTANTANTANTANT
6	262 SerGlyIleGluLeuSerGluGlyLlysMetLeuMetAsnArgGluIleIl 278
283	6 FIGACAGETTITCAAGAGATGATATCAFIGGGGAAGTTCTAATTCCTCTC /4
73486 AAATTAATGACGGTCAAGGTTCAGATACATTC	245 heAspArgPheSerArgAspAspIleIleGlyGluValLeuIleProLeu 261
CAGAG	74436 ACCCTACACCCAAATCCAAGAATTGGCCTTGCACTTCACAATTTTGAGTT 74387
283	228 eProTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerP 245
73586 TATAAAAATCAATAGACATACTAATTTGTGTT	212 ATGLYSTIL LEURSPFTORLERIENSPOLUTIF PRETRIFINETRYGLY11 228
283	AAATGACGATCCTCCCAGAGAAGAAGCATAAAGTGAAAACTAGAGTGCTG
73636 GATTTCAACAGTGGTATATCAGAATAACTTCI	195 ysMetThrIleLeuProGluLysLysHisLysValLysThrArgValLeu 211
73686 GACATCAARGAAACAAATTTAACCCCATTTTC	74585 TGC.TTGCCAGCCATGGATGAGCAGTCGATGACCTCTGACCCATATATCA 74537
	178 gGlyLeuProAlaMetAspGluGlnSerMetThrSerAspProTyrIleL 195
73736 TTTTGTAGTTACACTACTCTGGTAGTTCTGGG	35 GAATACAACTTCGAGAGAAAAGCATTTGTGGTCAATATCAAGGAAGCCCG
283	
73786 ATTATAAATGCTCATCTCTAAATTGTATAGTA	149 eurntsefoluglulyscholulyscholulyscholulphopheserleu 161
283	AS COMPANY AND ASSESSED AS A CONTRACT OF A C
73836 TGACTTTCCATGGAATTGCCTTTCAAGGAAGA	128 uGlyGluLysGluSerValSerProGluSerLeuLysSerSerThrSerL 145
19	
283	128
O	95 spieuGilulysargAspieuAsnGlyAspiPeprolysThrAsnieuLys 111
283	5
73986 ATATTTTGACAGACACTGCTACTTTAAAATAC	78 sAsnGluValLysAsnLysProAlaValProLysAsnSerLeuHisLeuA 95
74036 GGATATTTAGATATCACCTATATAAATACTTT	74935 ATTTACCCTGAAAACCTAAATAGCAAAAAGAAGTTTGGAGCAGATGATAA 74886
:	62 IleTyrProGluAsnLeuAsnSerLysLysLysPheGlyAlaAspAspLy 78
74086 TGAAATACTCAAAGTGTTTTAATGATGTAAAA	
283	45 erAsnLysThrProProTyrLysPheValHisValLeuLysGlyValAsp 61
6 TAA	28 eThrValSerLeubheAlaTrplleCysCysGlnArgLysSerSerLysS 45
283	Suga entermatic control enterminate de la control de la co
74186 AAGCTTGTACATATCATCCTTACCATGTTTA	n a
283	eg 1/1 to reverse of: AC068125 from: 1 to: 170218
-	

73287	ТААА ТАТАГТАСТОТ АСТТТТАСТТТСТСАСССАТСАСТСТСАСТСАА.	73336
283		283
73337	ATTCTCCTTAGAGTGCCTACTTATACAGCTGTCCCCATATTAGTTTTTGTA	73386
283		283
73387	CCCGGCTGGTTAAGTGATACAGTGGGAATAAGGATCTTTCTT	73436
283		283
73437	AAATTAATGACGGTCAAGGTTCAGATACATTCCACAGCTTGTTTGAGACA	73486
283		283
73487	TTCAGAGCTGAAAACCTGAGAGCTCATTTTGACTGTCTCCTCTCCTATTG	73536
283		283
73537	TATAAAAATCAATAGACATACTAATTTGTGTTTTTTAAACAACATAGTGT	73586
283		283
73587	GATTTCAACAGTGGTATATCAGAATAACTTCTCTCTATAATACAATGATT	73636
283		283
73637	GACATCAATGAAACAAATTTAACCCCCATTTTCACTTTAAATTTGAAACTC	73686
283		283
73687	TTTTGTAGTTACACTACTCTGGTAGTTCTGGGTTTATTAGAAAATAGTAA	73736
283		283
73737	ATTATAAATGCTCATCTCTAAATTGTATAGTAGGAAATGAGTCCCGCTAT	73786
283		283
73787	TGACTTTCCATGGAATTGCCTTTCAAGGAAGAGGCATCACGTCATTTTCA	73836
283		283
73837	ATTGAAATTTAAAATTAAATCAATTCTTCCTGAAGATTTGGAAATTGTAT	73886
283		283
73887	CATAAGCAAGTTAACAAAGAGATTTCAAGGTCAACATAATTGAATTTAAA	73936
283		283
73937	${\tt ATATTTTGACAGACACTGCTACTTTAAAATACAGGTGAATATTTCTTATT}$	73986
283		283
73987	GGATATTTAGATATCACCTATATAAATACTTTTGTTAATCTCTATCATAA	74036
283		283
74037	${\tt TGAAATACTCAAAGTGTTTTAATGATGTAAAATAAATAGGCATTCTTTAT}$	74086
283		283
74087	TAATGGAGATCAAGGGAATAGAACAGATGAAATAAAATTTAATCCATAAC	74136
283		283
74137	AAGCTTGTACATATCATCCTTACCATGTTTAATTATTAATTA	74186
283		283

323		323
N 1	GTAAGAATGCTTCTGA	0 (
373	LeuProLysSerAspValSerGlvLeu Ser	بر د د
312 72437	ysTyrGlnSerThrThrAsnThrLeuThrValValValLeuLysAlaArg	296 72486
296 72487	TCTCTTTCTGCAGAAGTCTTCAGGACGGGGTGAGTTACTGATCTCTCTC	72536
72537		8
283		283
72587	ATAAAAATAAGTAAGATTATATTTAAATGACGATGTTATTTAAACTTTAA '	72636
283		283
72637	GGTACTGCTCAAAAGCTTTTAGTTACTCTTCAATTCCTTAGAATATTAAA	72686
283		283
72687	GTACCAAACAAGACCACAAGATGGCAGGCAGTGGTTTTTCAAGCAGCGAT	72736
283		283
72737	TTTCTAAGTAATGGGTGTGGCCAATTTATTGCCAATTTTAACTTCCTGTA	72786
283		283
72787	AAAGCCAAAAATAATCCTGTGTAGGATATAATTTAAATATCCTTTAAACA '	72836
283		283
72837	GCTTTATTACTATTAATAACTTTGAAAAGTAGAGATGTTATTAAAAACCA	72886
283		283
72887	GTATGTGTAGTCATTTGACCCAACACATACTCATGCAAAGAATTAGATAA	72936
283		283
72937	GGTGCTAAAGAATTTGAAATCAAATCAAACTTATCTAATTTTTTGCATGA	72986
283		283
72987	TTGGGATCAGAATAATTCTCACTGGGTCTGAGTTCAAATTTCAATATGTC	73036
283		283
73037	AAAGAGGCAGAAATTTTAACTCCATTATCCCTCTGGGCCAGGAATGTAG	73086
283		283
73087	ATGCTTAAGATCAATTCATTCCTTGGCTTAAATGGAAACTTGCTGTTGTG	73136
283		283
73137	TAGCACGCAAAGAAGGACGCTATGACACTGTCCAAAAAACAATGCTCTCCA	73186
283		283
73187	AATTATTGTATATCTTATCTATTGTCTTTAAAGTACAAATGAAATCTAAG	73236
283		283
73237	ACAAACACCAAGTTAATATATTGTTACTTTCAGTCAAAACTTTTACTTTG	73286
283		283

323	323	
71487	71536 TITCCATATTCTTCCTTATTTTCAATTCTGTTGACAAGAGAAATGCCAAG	
323	323	
71537	71586 TATCATTAATTTTTTCCCTTATTCTCTAATTTAGAACTTTTTTCTCTTAT	
323	323	
71587	71636 TGGGTCCATAGAACATTCTATTTTCTTTTCCTTTTGTGTTACTTCTTTTCC	
323	323	
71637	71686 ATTTTTTTCCTTCTATCCTATTCTCTGGAGTAAGTTAATAGTAATCAGAA	
323	323	
71687	71736 AGACTCACCCAAAGTCATACAAGTCAGTAAAGCTACATGTTGTCTAATAT	
323	323	
71737	71786 GGACTCTAAATCCTCATTCGATGGAAAACACAGCCAAAAGTCAGGGAAAT	
323	323	
71787	71836 TGACTAAAGAAATTCATAAAAGTTAAAACTAAAAAGAATATTGCCATTGT	
323	323	
71837	71886 AATGACACAGAGAAGCTCAACACTAGGAAACAGAAAGCAAATCCAGCCTG	
323	323	
71887	71936 GCAAAAGTAATTGTGATAAAGTAGCATGAACTTAAAATCTACATACTAAC	
323	323	
71937	71986 AGATTAGATTGTGAAGCTAAAATTAACTCATATGGTGCCACCAGAAAAAG	
323	323	
71987	72036 TAATAATATTATTATTTAATGATGGGAGTTGAAAACATGGTCTTAAA	
323	323	
72037	72086 CCTGAGGGGCCTTGTGAGAACTAGAAATACATACTTCTTCAGATATCATC	
323	323	
72087	72136 TGATTGGGTATGTTTCTTAAACTGTACAAACTGGACATAATGCTACTCAT	
323	323	
72137	72186 TTAAAATTACCTGAGTTCAAATCCTAACCCTTCCATTCACTAGCAAAATA	
323	323	
72187	72236 ACGCCAATTTTATGTTGTATAGCACAATGAGAAAAAAAAA	•
323	323	
72237	72286 TAAAAGTTAGCTTTTAGTTTTATGACTAGCTTTACAAAAAATGAAACAAA	
323	323	
72287	72336 CACCTACTCTTACTCTTCTATCTTTTCTCTAATACCTTATGTATCTGCTA	
323	323	
72337	72386 AATATTCAGATTCACTGTATGATTGGAATGTATTTGACTGCAAATGAGCC	

```
seq_documentation_block:
LOCUS AB026808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: gb_ro:AB026808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71036 GT 71035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               71086 CTGTGACTACCCCAGGAGACAAATTGCCAAGTGGCACGTGCTCTGTGATG 71037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71186 TGGTTTTGGATTCTGAAAGGGGGTCCCGAAATGAGGTAATCGGGCAGTTA 71137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71236 TGTCTTTGATATTCCTTGTGAGGGCCTTGAAGATATAAGTGTTGAATTTT 71187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71286 AAGACTCATGTGAAGAAATGCACCCCCAATGCAGTGTTCAATGAGCTGTT 71237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                71386 CTCCAGCCCAGTTATGCCATTGTAATGCCTGTTATGTTCCACTGCAGATC 71337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71136 GTCTTGGGTGCAGCAGCAGAAGGAACTGGTGGAGAGCACTGGAAAGAGAT 71087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71436 GTCATTGGCATGCCATGATCTCTAAGGGCACTGTTATCTTGATATCAGCT 71387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              392 ValLeuGlyAlaAlaAlaGluGlyThrGlyGlyGluHisTrpLysGluIl 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   358 eValPheAspIleProCysGluGlyLeuGluAspIleSerValGluPheL 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 425 ly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          408 eCysAspTyrProArgArgGlnIleAlaLysTrpHisValLeuCysAspG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      euValLeuAspSerGluArgGlySerArgAsnGluValIleGlyGlnLeu 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LysThrHisValLysLysCysThrProAsnAlaValPheAsnGluLeuPh 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       roTyrValLysValAsnLeuTyrHisAlaLysLysArgIleSerLysLys 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTATGTCAAAGTGAACCTGTACCATGCCAAAAAGAGAATCTCCAAGAAG 71287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTATCCATATTTTTCTGTTGTTTTGACTTATTTTCCTGGTAACCACAT 71437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .....AspP 325
                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (27-APR-1999) to the DDBJ/EMBL/GenBank databases.
Mitsunori Fukuda, RIKEN Brain Science Institute, Developmental Neurobiology Laboratory; 2-1 Hirosawa, Wako, Saitama 351-0198, Japan (E-mail:mnfukuda@brain.riken.go.jp, Tel:81-48-467-9745, Fax:81-48-467-9744)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Fukuda, M., Kanno, E. and Mikoshiba, K.
Conserved N-terminal cysteine motif is essential for homo-and heterodimer formation of synaptotagmins III, V, VI, and X J. Biol. Chem. 274 (44), 31421-31427 (1999)
20002669
2 (bases 1 to 1293)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AB026808 1293 bp mRNA ROD 27-OCT-1999 Mus musculus mRNA for synaptotagmin XI, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus (strain:ICR) Adult Cerebellum cDNA to mRNA. Mus musculus \underline{\mbox{Mus}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     synaptotagmin XI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AB026808.1 GI:6136793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 1293)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (sites)
                                      /tissue_type="Cerebellum"
1. .1293
                                                                                                        /db_xref="taxon:10090"
/dev_stage="Adult"
                                                                                                                                                                                                     /organism="Mus musculus"
/codon_start=1
                                                                                                                                                                                                                                                                           ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_block:
US-09-680-121-2 x AB026808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quality: 1167.50
Ratio: 3.444
Percent Similarity: 74.179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Align seg 1/1 to: AB026808 from: 1 to: 1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           351 TATGGACCAGTTACCCATC.....AAAAGAGACTATGGGGAAGAAC 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301 GGCCTGCTGAGCCACGACAAGGATCCCAGAGGGCCTAGCCCTGCATCTTG 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   251 GCCCTCGGAGGGAAAGTGGACGAGGGAACCTGTTAATAAACGCGGAGTCT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201 GACCCTCAGCAACAAGAAGAAATCATCAAAGTTCGGAGAGACAAAGATG 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101 TCTTTGTGTGGACGTGCTGCCACCAGCAGGCAGAGAAGAAGCACAAGACC 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 73 ...PheGlyAlaAspAspLysAsnGluValLysAsnLysProAlaValPr 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32 euPheAlaTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThr 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17 lValGlyIlePheSerAlaPheGlyLeuValPheThrValSer..... 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ATGGCTGAGATCACAAATATACGCCCCAGCTTTGATGTGTCACCGGTAGC
                               TGTTAGGCTCTCTTACCTTCTCCGTGGACTACAACTTTCCCAAGAAAGCT
                                                                         ysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLysAla 169
                                                                                                                                                                                                                                 oGluSerLeuLysSerSerThrSerLeuThrSerGluGluLysGlnGluL 153
                                                                                                                                                                                                                                                                                                                                                                     AsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerValSerPr 136
                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAGGAGCCCCATGACAAGCCTGACCCCT..........
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     he.....ProLysThrAsnLeuLysProGlySerProSerAspLeuGlu 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OLysAsnSerLeuHisLeuAspLeuGluLysArgAspLeuAsnGlyAsnP 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGCTGGCCTCATCGGGGCCTCCGTGCTGGTGTGTGTGTTTCAGTGACTG 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="synaptotagmin x1"
/prodein_id="baA85780.1"
/db_xref="G1:6136794"
/translation="MAEITNIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTCCHQQA
/translation="MAEITNIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTCCHQQA
/translation="MAEITNIRPSFDVSPVAAGLIGASVLVVCSSVTVFVWTCCHQQA
/translation="MAEITNIRPSFDVSPVAAGLIGASVLVVCSSGRULINAESGL
LSHHKDPROFSPASCHOOLPIK ROFGELSSPWTSLTPBCSKPTSPSSPEEDVMLGSTL
TSVDXNFPKKALVVTLOEAHGLPVMDDOTGGSDPYLKMTLLPKRHLVKTRVLRKTL
TSVDXNFPKKALVVTLOEAHGLPVMDDOTGGSDPYLKMTLIPKRHKVTRVLRKTL
DPVEDETFFTFYGIPYSQLODLVLHFLVLSFDRFSRDDVIGEVMVPLAGNDFTGLSGRPYVKVQL
VYYGRKIJAKKTHVKKCTLNPVENESFIYDIFTDLLPDISIEFLVIDFDRTTKNEVV
GRLILGAHHYTTSGAEHWREVCESPFKPIAKWHSLSEX"

a 347 c 346 g 263 t
                                                                                                                                                                                                                                                                                                          ........GGTGAGAGCAAGCCCACCTCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vaps: 8
Percent Identity: 50.985
                                                                                                                                                                      TCCTCGCCAGAGGAAGACGTGA 466
```

JOURNAL MEDLINE REFERENCE AUTHORS TITLE

JOURNAL

FEATURES

CDS

516

443

72

VERSION KEYWORDS SOURCE ORGANISM

ACCESSION DEFINITION

REFERENCE AUTHORS

TITLE

```
seq_documentation_block:
LOCUS BC004291
                                                                                                                                             seq_name:
KEYWORDS
               VERSION
                                  ACCESSION
                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                1167
                                                                                                                                                                                                                                                                                                                                                                                                          1117
                                                                                                                                                                                                                                                           1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          917
                                                                                                                                                                                                                                                                                              401
                                                                                                                                                                                                                                                                                                                                                                                                                                           369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  253 leIleGlyGluValLeuIleProLeuSerGlyIleGluLeuSerGluGly 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             517
                                                                                                                                                                                                                                                                                                                                                                                                    laValPheAsnGluLeuPheValPheAspIleProCysGluGlyLeuGlu 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SLYSArgIleSerLySLysThrHisValLysLysCysThrProAsnA 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SerGlyLeuSer...AspProTyrValLysValAsnLeuTyrHisAlaLy :::|||||||| :::||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      uAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArgAspAspI 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ysHisLysValLysThrArgValLeuArgLysThrLeuAspProAlaPhe ::|||:::|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nSerMetThrSerAspProTyrTleLysMetThrIleLeuProGluLysL 203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LysTrpHisValLeuCysAsp 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGCAGAGGGGAACTCCAGGTATCTCTGTCATACCAGCCCGTCGCACAGA 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThrThrAsnT 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LysMetLeuMetAsnArgGluIleIleLysArgAsnValArgLysSerSe 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGluLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACCCAGGGCTCCGATCCCTACATCAAAATGACCATTCTCCCGGACAAGC 616
                                                                                                                                                                                 AAGTGGCACAGTCTGAGCGAG 1287
                                                                                                                                                                                                                                                           GTGCGGAACACTGGAGAGGGTCTGCGAGAGTCCCCGCAAGCCCATAGCC
                                                                                                                                                                                                                                                                            lyGlyGluHisTrpLysGluIleCysAspTyrProArgArgGlnIleAla 417
                                                                                                                                                                                                                                                                                                                                TGAGGTGGTAGGGAGGCTGATCTTGGGGGCACACAGTGTCACAACCAGTG
                                                                                                                                                                                                                                                                                                                                                                 nGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr...G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGTCTTCAATGAGTCGTTCATCTATGACATCCCCACCGACCTTCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAACGCATTGCCAAGAAGAAACCCATGTAAAGAAGTGCACTTTGAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCGGTCTCTCAGGTAATCCTTATGTCAAGGTGAACGTCTACTACGGCAG 1016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGTTCAGCTGACCAGGGACATCATCAAGAGGAACATTCAGAAGTGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCATCGGAGAGGTCATGGTGCCATTGGCTGGAGTGGACCCCAGCACAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGCTGCATTTCCTGGTGCTCAGCTTTGATCGATTCTCTCGGGATGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGCATCGAGTGAAGACCCGAGTGCTTCGCAAGACGCTGGACCCGGTGTTC
                                                                                                                                           gb_pr:BC004291
                                                  Homo sapiens, Similar to synaptotagmin 11, IMAGE: 3621175, mRNA, complete cds.
           BC004291
BC004291.1 GI:13279139
                                                                                      2950 bp
                                                                                        mRNA
                                                                     clone MGC:10881
                                                                                                                                                                                                                                                                                                                                1216
                                                                                                                                                                                                                                                                                                                                                                     401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        766
```

```
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                      alignment_block:
US-09-680-121-2 x BC004291
                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                  Align seg 1/1 to: BC004291
                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
1 MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa
                                                                                                                                                                                                                         Quality: 1162.00
Ratio: 3.349
milarity: 79.405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Steven Jones, Jennifer Asano, Ian Bosdet, Yaron Butterfield, Susanna Chan, Readman Chiu, Chris Fjell, Erin Garland, Ran Guin, Letticia Hsiao, Martin Krzywinski, Reta Kutsche, Oliver Lee, Soo Sen Lee, Victor Ling, Carrie Mathewson, Candice McLeavy, Steven Ness, Pawan Pandoh, Anna-Liisa Prabhu, Parvanah Saeedi, Jacqueline Schein, Duane Smailus, Michael Smith, Lorraine Spence, Jeff Stott, Michael Thorne, Miranada Tsai, Natasja van den Bosch, Jill Vardy, George Yang, Scott Zuyderduyn, Marco Marra.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Clone distribution: MGC clone distribution information can through the I.M.A.G.E. Consortium/LLML at: http://image.lln Series: IRAL Plate: 13 ROW: j Column: 19
This clone was selected for full length sequencing because passed the following selection criteria: Hexamer frequency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (01-MAR-2001) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC Cancer Agency, Vancouver, BC, Canada info@bcgsc.bc.ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNA Library Preparation: Rubin Laboratory cDNA Library Arrayed by: The I.M.A.G.E. Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tissue Procurement: Louis M. Staudt, M.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Strausberg,R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo 1 (bases 1 to 2950)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              analysis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DNA Sequencing by:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                             790
                                                                                                                                                                                                                                                                                                                                                                                                                          VGRLILGAHSVTASGAEHWREVCESPRKPVAKWHSLSEY"
708 c 704 g 748 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LDPVFDETFTFYGIPYSQLQDLVLHFLVLSFDRFSRDDVIGEVMVPLAGVDPSTGKVQ
LTRDIIKRNIQKCISRGELQVSLSYQPVAQRMTVVVLKARHLPKMDITGLSGNPYVKV
NVYYGRKRIAKKKTHVKKCTLNPIFNESFIYDIPTDLLPDISIEFLVIDFDRTTKNEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation="maritnirpsfdvspvvagligasvlvvcvsvtvpvwscchooa
kkirknpvxkfihmlkgisirpetlsnkkiikvrndkdpgreggrrullvdaarag
llsrdprdpsgsgsgiddleiknyggellspfislipgeskttspsspeedywlgs
ltfsvdvnfpkkalvytiorahglpvmddqtogsdpyikmtilpdkrhrvktrvlrkt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="Similar to synaptotagmin
/protein_id="AAH04291.1"
/db_xref="GI:13279140"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="MGC:10881 IMAGE:3621175"
/tissue_type="Lymph, Burkitt lymphoma"
/clone_lib="NIH_MGC_8"
/lab_host="DH10B-R"___
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Vector: pOTB7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .1479
                                                                                     from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome Sequence Centre,
                                                                                                                                                                                                                            Percent
                                                                                     1
                                                                                     to:
                                                                                                                                                                                                                            Identity:
                                                                                     2950
                                                                                                                                                                                                                                                      Gaps:
                                                                                                                                                                                                                              52.403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     information can be fou http://image.llnl.gov
                                17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        found
```

```
1063 GAGCTCCAGGTGTCTCTGTCATATCAGCCTGTGGCACAGAGAATGACAGT 1112
                                                                                                                                                                                                                                                                                                                                        913
                                                       290 GluLeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrVa 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     156 rLeuPhePheSerLeuGluTyrAsnPheGluArgLysAlaPheValValA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110 uLysProGlySerProSerAspLeuGluAsnAlaThrProLysLeu.... 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                434 GTCCTGGGAGGGAAGGTGGACGTAGGAACCTGTTGGTGGACGCAGCAGAG 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        384 GACCCTCAGCAACAAGAAGAAATCATCAAAGTGCGGAGAGACAAAGATG 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            284 TCTTTGTCTGGTCATGCTGCCACCAGCAGGCAGAGAAGAAGCACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       234 GGCCGGCCTCATCGGGGCCCTCTGTGCTGGTGTGTGTGTCTCGGTGACCG 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      184 ATGGCTGAGATCACCAATATCCGACCTAGCTTTGATGTGTCACCGGTGGT 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               snIleLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerMetThr 189
::|||:::||||:::|
cAATCCAGGAGGCCCACGGGCTGCCAGTGATGGATGACCAGACCCAGGGA 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    heThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHis 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         lLysThrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrP 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         euPheAlaTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThr 48
                                                                                                              TGACCAGGGACATCATCAAAAAGGAATATCCAGAAGTGCATCAGCAGAGGG 1062
                                                                                                                                               etAsnArgGluIleIleLysArgAsnValArgLysSerSerGlyArgGly 289
                                                                                                                                                                                                                                                                       uValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLysMetLeuM 273
                                                                                                                                                                                                                                                                                                                                                                  PheThrIleLeuSerPheAspArgPheSerArgAspAspIleIleGlyGl 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GANGACCAGAGTGCTGCGGAAGACCCTGGACCCTGTGTTTGACGAGACCT 862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SerAspProTyrIleLysMetThrIleLeuProGluLysLysHisLysVa 206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTCACCTTCTCAGTGGACTATAACTTCCCGAAAAAAGCCCTGGTGGTGA 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LysSerSerThrSerLeuThrSerGluGluLysGlnGluLysLeuGlyTh 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGGGAAGAACTAAGGAGCCCTATTACAAGCCTGACCCCTGGGGAGAGC 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGGCCTGCTAAGCCGAGAC......AAAGATCCCAG 515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LeuAspLeuGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLe 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 spLysAsnGluValLysAsnLysProAlaValProLysAsnSerLeuHis 93
                                                                                                                                                                                                                                                                                                                                     TTCCTTGTCCTCAGCTTTGACCGCTTCTCTCGGGATGATGTCATTGGCGA 962
                                                                                                                                                                                                                                                                                                                                                                                                                                                TCACCTTCTATGGCATCCCCTACAGCCAGCTGCAGGACCTGGTGCTGCAC 912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTGACCCCTACATCAAAATGACCATCCTTCCTGACAAACGGCATCGGGT 812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAA...ACCACCTCTCCATCATCTCCAGAGGAGGATGTCATGCTAGGATC 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .........PheLeuGluGlyGluLysGluSerValSerProGluSerLeu 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGGCCTAGCTCTGGATCTTGTATAGACCAATTACCCCATCAAAATGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lValGlyIlePheSerAlaPheGlyLeuValPheThrValSer.....L 32
                                                                                                                                                                                                                         GGTCATGGTGCCACTGGCAGGGGTGGACCCCAGCACAGGCAAGGTACAAC 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               333
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: gb_ro:AF375465
                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
LOCUS AF375465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1463 GTCTGAGCGAG 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1313 TCGAGTTCCTCGTTATCGACTTCGATCGCACCACCAGGAATGAGGTGGTG 1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1413 CTGGAGAGAGGTCTGCGAGAGCCCCCGCAAGCCTGTGGCCAAGTGGCACA 1462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1363
                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               404 sTrpLysGluIleCysAspTyrProArgArgGlnIleAlaLysTrpHisV 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          372 alGluPheLeuValLeuAspSerGluArgGlySerArgAsnGluValIle 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421 alLeuCysAsp 424
                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlyGlnLeuValLeuGlyAla...AlaAlaGluGlyThrGlyGlyGluHi 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGTAATCCTTATGTCAAGGTGAACGTCTACTACGGCAGAAAGCGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGAGGCTGATCCTGGGGGCACACAGTGTCACAGCCAGTGGTGCTGAACA 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nGluLeuPheValPheAspIleProCysGluGlyLeuGluAspIleSerV 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      er...AspProTyrValLysValAsnLeuTyrHisAlaLysLysArgIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Norway rat.
Rattus norvegicus
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                   Submitted (02-MAY-2001) Center for Basic Neuroscience, Department of Molecular Genetics, and Howard Hughes Medical Institute, University of Texas Southwestern Medical Center, 6000 Harry Hlnes Blvd., Dallas, TX 75390-9111, USA
                                                                                                                                                                                                                                                                                                                                               Shin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 (bases 1 to 1293)

von Poser, C., Ichtchenko, K., Shao, X., Rizo, J. and Sudhof, T.C.

The evolutionary pressure to inactivate. A subclass of
synaptotagmins with an amino acid substitution that abolishes Ca2+
                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF375465
AF375465.1 GI:14210271
                                                                                                                                                                                                                                                                                                                                                                                        9162066
                                                                                                                                                                                                                                                                                                                                                                                                                              J. Biol. Chem. 272 (22), 14314-14319 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus
                                                                                                                                                                                                                                                                                                                                             (bases 1 to 1293)
in,O.-H., von Poser,C., Ichtchenko,K., Shao,X., Rizo,J. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               norvegicus synaptotagmin 11 mRNA, complete
              /product="synaptotagmin 11"
/protein_id="AAK56960.1"
/db_xref="GI:14210272"
                                                                                               /note="putative membrane trafficking protein
                                                                                                                    /organism="Rattus norvegicus"
/db_xref="taxon:10116"
1. .1293
                                                                                                                                                                                              Location/Qualifiers
/translation="MAEITNIRPSFDVSPVAAGLIGASVLVVCVSVTVFVWTCCHQQA
                                                                            /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1293 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostom1;
; Murinae;
```

ORIGIN alignment_scores: BASE COUNT US-09-680-121-2 x AF375465 Align seg 1/1 to: AF375465 184 167 459 150 436 401 351 107 251 GTTCTCATAGGGAAAGTGGACGAGGGAACCTGTTAGTAAATGCGGAGTCT 201 GACCCTCAGCAACAAGAAGAAATCATCAAAGTTCGGAGGGACAAAGATG 151 301 GGCCTCCTGAGCCATGACAGGGATCCCAGAGGGCCTAGCCCTGCATCTTG 101 TCTTTGTGTGGACATGCTGCCACCAGCAGGCGGAGAAGAAGAACACAAGACC 99 82 65 49 32 51 17 ш ProProTyrLysPheValHisValLeuLysGlyValAspIleTyrProGl ||||||||||||| |CACCGTACAAGTTTATTCATATGCTGAAAGGCATTAGCATCTACCCAGA sGlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluA
:::: ValSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLy CCATGACCAGCCTGACCCCC........ ysAsnLysProAlaValProLysAsnSerLeuHisLeuAspLeuGluLys 98 lValGlyIlePheSerAlaPheGlyLeuValPheThrValSer.....L Similarity: spLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSer 133 TATAGACCAGTTACCCATCAAAAGAGACTATGGGGAAGAACTGAGGAGCC uAsnLeuAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValL GGCTGGCCTCATCGGCGCCCTCTGTGCTGGTGTGTGTGTCTCTGTGACTG ATGGCTGAGATCACAAATATACGCCCCAGCTTTGATGTGTCACCAGTAGC MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa rgLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMet 183 AGATGTGATGCTAGGGTCCCTTACCTTCTCGGTGGACTACAACTTTCCCALysThrAsnLeuLysProGlySerProSerA 117ArgAspLeuAsnGlyAsnPhePro..... Quality: 1160.50 Ratio: 3.413 nilarity: 76.749 334 þ EKKHKTPPYKFIHMLKGISIYPETLSNKKKIIKVRDKDGSHRESGRGNLLVNAESGL
LSHDRUDRGPSPASCLDQLPIKRDYGEELRSPMTSLTPGESKFYSPSSPEEDVMLGSL
TFSVDYNFPKKALVVTIQEAHGLPWDGOTQGSDPYKMTILPDKRHRVTKRVLL
DPVFDETFTFYGIPYSQLODLVLHFLYLGFDRRFSRDDVIGEVMVPLAGVDFSTGKVQL
TRDIIKRNIQKCISRGELQVSLSYQPVAQRMTVVVLKARHLPKMDITGLSGNPYVKVN
VYYGRKKIAKKKTHVKKCTLNFIFNESFIYDIPTDLLPDISIEFLVIDFDRTTKNEVV GRLILGAHSVTTSGAEHWREVCESPRKPVAKWHSLSEY"
344 c 340 g 275 t from: 1 Percent Identity: 51.693TCATCGCCAGAGGA 9 to: Length: 1293 .GGTGAAAGCAAGCCC 167 435 400 300 65 48 458 82 150 32 50 809 200 558 350 106 250

```
REFERENCE
AUTHORS
                                                                                                                                               VERSION
KEYWORDS
                                                                                                                                                                                                                                                  seq_documentation_block:
                                                                                                                                                                                                                                                                                    seq_name: gb_pr:AK027540
                                                                                                                               SOURCE
                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                 ACCESSION
                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1009
                                                                                                                                                                                                                                                                                                                                                                                                                           399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   erAspValSerGlyLeuSer...AspProTyrValLysValAsnLeuTyr 332
|||:::::|||||||||
||GGATATCACCGGTCTCTCAGGTAATCCTTATGTCAAGGTGAACGTCTAC 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          yThr...GlyGlyGluHisTrpLysGluIleCysAspTyrProArgArgG 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                         lyLeuGluAspIleSerValGluPheLeuValLeuAspSerGluArgGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HisAlaLysLysArgIleSerLysLysLysThrHisValLysLysCysTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LysSerSerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              erGluGlyLysMetLeuMetAsnArgGluIleIleLysArgAsnValArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gAspAspIleIleGlyGluValLeuIleProLeuSerGlyIleGluLeuS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GlnGluLeuAlaLeuHisPheThrIleLeuSerPheAspArgPheSerAr
                                                                                                                                                                                                                                                                                                                      CTGTAGCCAAGTGGCACAGTCTGAGCGAG
                                                                                                                                                                                                                                                                                                                                                     lnIleAlaLysTrpHisValLeuCysAsp
                                                                                                                                                                                                                                                                                                                                                                                         AACCAGTGGTGCAGAACACTGGAGAGAGGTGTGCGAGAGTCCCCGCAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCTGCCTGATATCAGCATCGAGTTCCTTGTCATTGACTTCGATCGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTGAACCCCATCTTCAATGAGTCCTTCATCTATGACATCCCCACCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rProAsnAlaValPheAsnGluLeuPheValPheAspIleProCysGluG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACGGCAGAAAACGCATTGCCAAGAAGAAAACTCATGTAAAGAAGTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGTGCATTAGCAGAGGGGAACTCCAGGTATCTCTGTCATACCAGCCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACAGGCAAGGTTCAGCTGACCAGGGACATCATCAAGAGGAACATTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGATGACGTCATCGGGGAGGTCATGGTGCCCTTGGCTGGAGTGGACCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGACCTGGTGCTGCACTTCCTTGTGCTCAGCTTTGATCGCTTCTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AK027540.1 GI:14042289 oligo capping; fis (full insert sequence). Homo sapiens teratocarcinoma cell_line:NT2 cDNA to mRNA, clone_lib:NT2RP2 clone:NT2RP2001081.
                                                                                                                                                                                            AK027540 2315 bp mRNA
Homo sapiens cDNA FLJ14634 fis,
similar to SYNAPTOTAGMIN IV.
1 (sites)
Isogai,T., Ota,T., Hayashi,K., Sugiyama,T., Otsul
Nishikawa,T., Nagai,K., Sugano,S., Shiratori,A.,
                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                             Homo sapiens
                                                           Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                      1287
                                                                                                                                                                                                                                                                                                                                                       424
                                                         Catarrhini;
                                                                         Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                clone NT2RP2001081,
                                                           Hominidae;
       Otsuki,T., Suzuki,Y.,
i,A., Sudo,H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              217
                                                                                                                                                                                                                                  15-MAY-2001
                                                                                                                                                                                                                moderately
```

```
TITLE
JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-680-121-2 x AK027540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to: AK027540 from: 1 to: 2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
     346
                                                                                                                                                                                                                                                                                                                                                           246 GGCCGGCCTCATCGGGGCCTCTGTGCTGGTGTGTGTCTCGGTGACCG 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         296 TCTTTGTCTGGTCATGCTGCCACCAGCAGGCAGAGAAGAAGCACAAGAGC 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                    49 ProProTyrLysPheValHisValLeuLysGlyValAspIleTyrProGl 65
                                                                                                                                                                                                                                                                 32 euPheAlaTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThr 48
                                                                                                                                                                                                                                                                                                                                                                                                                     1 MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa 17
CCACCATACAAGTTTATTCACATGCTCAAAGGCATCAGCATATACCCAGA 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 (bases 1 to 2315)
2 (bases 1)
3 (bases 2)
4 (bases 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wagatsuma,M., Hosoiri,T., Kaku,Y., Kodaira,H., Kondo,H., Sugawara,M., Takahashi,M., Chiba,Y., Ishida,S., Murakawa,K., Ono,Y., Takiguchi,S., Watanabe,S., Kimura,K., Murakami,K., Ishii,S., Kawai,Y., Saito,K., Yamamoto,J., Wakamatsu,A., Nakamura,Y., Nagahari,K., Masuho,Y., Ninomiya,K. and Iwayanagi,T. NEDO human cDNA sequencing project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="unnamed protein product"
/codon_start=1
/codon_start=1
/protein_id="BAB55186.1"
/protein_id="BAB55186.1"
/db_xref="GI:14042290"
/db_xref="GI:14042290"
/translation="MAEITNIRPSFDVSPVVAGLIGASVLVVCVSVTVFVWSCCHQQA
/translation="MAEITNIRPSFDVSPVVAGLIGASVLVVCVSVTVFVWSCCHQQA
/translation="MAEITNIRPSFDVSPVVAGLIGASVLVVCVSVTVFVWSCCHQQA
EKKHKSPPYKFIHMLKGISIVPETLSNKKIIKVRRDKDGPGREGGRRNLLVDAAEAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /Organism="Homo sapiens"
/db_xref="taxon:9606"
/db_xref="taxon:9606"
/clone="NTZRP2001081"
/cell_line="NTZ"
/cell_type="teratocarcinoma"
/clone_lib='NTZRP2"
/clone_lib='NTZRP2"
/note="cloning vector: pME18SFL3-mRNA from NTZ neuronal precursor cells after 2-weeks retinoic acid (RA)
induction."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LDPVEDETFTFYGIPYSOLADLYLHFILVLSFDRFSRDDVIGEVMVPLAGADPSTGKVQ
LTRDIIKRNIQKCISRGELQVSLSYQPVAQRMTVVVLKARHLFKMDITGLSGNPYVKV
NVYVGRKRIAKKKTHVKKCTLNPIFNESFIYDIFTDLLPDISIEFLVIDFDRTTKNEV
VGRLILGAHSVTASGAEHWREVCESPRKPVAKWHSLSEY"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
1. .2315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LLSRDKDPRGPSSGSCIDQLPIKMDYGEELRSPITSLTPGESKTTSPSSPEEDVMLGS
LTFSVDYNFPKKALVVTIQEAHGLPVMDDQTQGSDPYIKMTILPDKRHRVKTRVLRKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            induction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length: 437
Gaps: 7
Percent Identity: 52,403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    570 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    560 t
```

AGGTAATCCTTATGTCAAGGTGAACGTCTAC erlyslyslysthrHisvallyslysCysTh :: CCAAGAAGAAAACCCATGTGAAGAAGTGCAC
123 GETGETCUTCAAAGCCAGACACTTGCCGAAGA 323 GrAspProTyrValLysValAsnLeuTyr 321 GrAspProTyrValLysValAsnLeuTyr 111 [11] [11] [11] [11] [11] [11] [11]
306 ValValLeuLysAlaArgHisLeuProLys
290 GluLeuLeuIleSerLeuCysTyrGlnSerThr ::: ::: 1075 GAGCTCCAGGTGTCTCTTGTCATATCAGCCTGTG
273 etAsnArgGluIleIleLysArgAsnValArgL ::::: :::
256 uValLeuIleProLeuSerGlyIleGluLeuSe
240 PheThrIleLeuSerPheAspArgPheSerArg
223 heThrheTyrGlylleProTyrThrGlnIleG
206 lLysThrargValleuargLysThrLeuaspPr
190 SerAspProTyrIleLysMetThrIleLeuPro
173 snileLysGluAlaArgGlyLeuProAlaMetA :: ::: ::: 725 CAATCCAGGAGGCCCACGGGCTGCCAGTGATGG
156 rLeuPhePheSerLeuGluTyrAsnPheGluAr ::
140 LysSerSerThrSerLeuThrSerGluGluLys
126PheLeuGluGlyGluLysGluSerV
Ö ⊅
GlyAs
77 spLysAsnGluValLysAsnLysProAlaValP
65 uAsnleuAsnSerLysLysPhe [:::

.

```
/SIDSB/gcgdata/geneseq/geneseqn/NA1995.DAT:AANT07604
/SIDSB/gcgdata/geneseq/geneseqn/NA1995.DAT:AANT07604
/SIDSB/gcgdata/geneseq/geneseqn/NA1995.DAT:AANT07604
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI10603
-/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI11855
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI11855
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH18555
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH18555
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH18555
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH167763
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH16773
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH18554
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH18554
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI19854
-/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI19854
-/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI19854
-/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI08688
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI08887
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI08887
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI08888
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAN088683
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAN088683
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAN09377
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAN09377
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAN098889
/SIDSB/gcgdata/geneseq/geneseqn/NA2001.DAT:AAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query leng
Database:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              욧
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database sequences: 930621
Database length: 428662619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Search information block: Ouery: US-09-680-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Date:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AA161195
/SIDS8/gcgdata/geneseq/geneseqn/NA1997.DAT:AAA679627
/SIDS8/gcgdata/geneseqf/geneseqn/NA1994.DAT:AAA67062
/SIDS8/gcgdata/geneseq/geneseqn/NA1999.DAT:AAZ00321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /SIDS8/gcgdata/geneseq/geneseqn/NA1996.DAT:AAT29743
/SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI59409
/SIDS8/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC76182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH14256
/SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI60519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /SIDS8/gcgdata/geneseq/geneseqn/NA2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /SIDS8/gcgdata/geneseq/geneseqn/NA1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /SIDS8/gcgdata/geneseq/geneseqn/NA1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of: US-09-680-121-2 to: N_Geneseq_1101:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              time (sec): 164.610000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Results were produced by the Gent
Copyright (c) 1993-2000 Compugen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N_Geneseq_1101:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the GenCore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DAT: AAV57327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DAT: AAI58733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EScore Len
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         software, version 4.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           out_format : pfs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      n ! Documentation
8 + 2201.00 4194.95
7 + 2201.00 4194.95
3 + 1162.00 2192.03
6 + 1159.00 2195.64
9 + 1154.00 2176.21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       604
464
464
442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               428
408
393
384
384
370
370
370
                    14194. 95

21195. 64

21195. 63

863. 03

863. 03

863. 03

751. 37

708. 63

698. 63

698. 63

698. 63

698. 63

698. 63

698. 63

698. 63

698. 63

698. 63

629. 77

629. 77

629. 77

629. 77

629. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 78

639. 7
                       .8e-08
                                                                                                                                                                                                                                                                            .4e-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .3e-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .le-37
                                                                        7e-10
                                                                                                                                                                                                 9e-13
                                                                                                                                                                                                                                                  6e-14
                                                                                                                                                                                                                                                                                                                                                                                                                          4e-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9e-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4e-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4e-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3e-55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4e-225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4e-225
                                                                                                  5e-11
                                                                                                                         0e-11
                                                                                                                                                3e-11
                                                                                                                                                                          7e-12
                                                                                                                                                                                                                           7e-13
                                                                                                                                                                                                                                                                                                                                                                           2e-
                                                                                                                                                                                                                                                                                                                                                                                                   0e-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1e-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3e-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7e-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7e-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7e-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0e-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1e-114
                                                                                                                                                                                                                                                                                                                        2e-22
                                                                                                                                                                                                                                                                                                                                                  2e-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2e-31
3891
3891
5310
5317
5517
5517
1647
1660
1560
1560
1560
1560
1560
1718
```

```
seq_documentation_block:
ID AAV54208 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA1998.DAT:AAV54208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH13999
/SIDS8/gcgdata/geneseq/geneseqn/NA1994.DAT:AAA57012
/SIDS8/gcgdata/geneseq/geneseqn/NA12000.DAT:AAA88502
/SIDS8/gcgdata/geneseq/geneseqn/NA2000.DAT:AAA88501
/SIDS8/gcgdata/geneseq/geneseqn/NA1993.DAT:AAA39966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           XGX
                       Repro-PC-1.0 (see AAW74584), which represents a novel human brain of synaptotagmin isoform that may function in exocytosis and endocytosis pathways. Subtractive hybridisation was used to isolate Repro-PC-1.0 cDNA from a male LNCaP tumour cDNA library. An overlapping clone (PS5-1) was subsequently obtained from the clibrary using a probe containing 5' sequences of Rep-PC-1.0, and the complete coding region was determined by sequencing PS5-1 and an overlapping RACE-PCR derived 5' end cDNA clone. The Repro-PC-1.0 gene localises to chromsome 18. The invention provides Repro-PC-1.0 polynucleotides, including probes and primers, antisense sequences useful in the treatment of prostate cancer, as well as a polynucleotide vaccine for elictiting an immune response against Repro-PC-1.0. Also claimed are methods for detecting Repro-PC-1.0 polynucleotides using the probes and primers, a method of inhibiting Repro-PC-1.0 expression in a cell using the antisense sequence, methods for diagnosing prostate cancer and for detecting prostate cancer cells in a subject, for following the progress of prostate cancer, for detecting a chromosomal translocation of a Repro-PC-1.0 gene, and for detecting polymorphic forms of Repro-PC-1.0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-MAY-1997;
07-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                This cDNA sequence codes a prostate cancer-specific marker, termed
                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New isolated Repro-PC-1.0 polynucleotide(s) products for the detection and prophylactic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1998-506363/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 French CK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-SEP-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO9839447-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Repro-PC-1.0 cDNA encoding prostate cancer-specific marker.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAV54208 standard; cDNA; 3891 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; AAW74584.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Repro-PC-1.0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         treatment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (REPR-) REPROGEN INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                     Page 64-67; 87pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      of prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .0; prostate cancer; marker; synaptotagmin; human;
therapy; vaccine; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Schneider PA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-0047811
97US-0041246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98WO-US04488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers 151..1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                         cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yamamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 XX;

    are used to develop
and therapeutic

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
179
178
178
177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 316.
311.
309.
304.
303.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .5e-09
.8e-09
.7e-09
.4e-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000
2167
2191
2981
3025
```

Sequence 3891 BP; 1229 A; 671 C;

788 G; 1203 T; 0 other

```
alignment_block:
US-09-680+121-2 x AAV54208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality: 2201.00
Ratio: 5.179
Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: AAV54208 from: 1 to: 3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134 alserProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys 150
234
                                                                                                                                                       217
                                                                                                                                                                                        751 GAGAAGAAGCATAAAGTGAAAACTAGAGTGCTGAGAAAAACCTTGGATCC
                                                                                                                                                                                                        201 GluLysLysHisLysValLysThrArgValLeuArgLysThrLeuAspPr 217
                                                                                                                                                                                                                                                     701 ATGAGCAGTCGATGACCTCTGACCCATATATCAAAATGACGATCCTCCCA 750
                                                                                                                                                                                                                                                                      184 spGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuPro
                                                                                                                                                                                                                                                                                                                 651
                                                                                                                                                                                                                                                                                                                                                167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             401 AGCCAGCTGTGCCAAAGAATTCATTGCATCTTGGATCTTGAAAAGAGAGAT 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     351 AAATAGCAAAAAGATTTGGAGCAGATGATAAAAATGAAGTAAAGAATA 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 TACAAGTTTGTGCATGTGCTTAAGGGAGTTGATATTTACCCTGAAAACCT 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                251 CATGGATCTGCTGTCAGAGAAAATCATCCAAGTCTAACAAGACTCCTCCA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34 laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51 TyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lValGlyIlePheSerAlaPheGlyLeuValPheThrValSerLeuPheA 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ysProAlaValProLysAsnSerLeuHisLeuAspLeuGluLysArgAsp 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL 84
                                                           pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV 134
                                                                                                                                                                                                                                                                                                                 gLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps: 0
Percent Identity: 100.000
                                                                                                                              850
                                                                                                                                                                                          800
                                                                                                                                                                                                                                                                                                                   700
```

```
seq_documentation_block:
ID AAV57327 standard; cDNA; 3891 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA1998.DAT:AAV57327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1301 GAAATGAGGTAATCGGGCAGTTAGTCTTGGGTGCAGCAGCAGCAAGGAACT 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1251 TGAAGATATAAGTGTTGAATTTTTGGTTTTGGATTCTGAAAGGGGGTCCC 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1201 AATGCAGTGTTCAATGAGCTGTTTGTCTTTGATATTCCTTGTGAGGGCCT 1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1151 CCAAAAAGAGAATCTCCCAAGAAGAAGACTCATGTGAAGAAATGCACCCCC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1101 TGATGTGTCCGGACTTTCAGATCCCTATGTCAAAGTGAACCTGTACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1051 ACAAACACTCTAACTGTGGTTGTCTTAAAAGCTCGACATCTGCCTAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1001 AGTCTTCAGGACGGGGTGAGTTACTGATCTCTCTCTGCTATCAGTCCACC 1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      351 AsnAlaValPheAsnGluLeuPheValPheAspIleProCysGluGlyLe 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        317 rAspValSerGlyLeuSerAspProTyrValLysValAsnLeuTyrHisA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    384 rgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        334 laLysLysArgIleSerLysLysThrHisValLysLysCysThrPro 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          284 ysSerSerGlyArqGlyGluLeuLeuIleSerLeuCysTyrGlnSerThr 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       267 rGluGlyLysMetLeuMetAsnArgGluIleIleLysArgAsnValArgL 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    367 uGluAspIleSerValGluPheLeuValLeuAspSerGluArgGlySerA 384
French CK, Yamamoto KK;
                                                                15-MAY-1997;
07-MAR-1997;
                                                                                                                                                                                                                                                                                                                                   Repro-Pc-1.0; prostate cancer; LNCaP; hormone regulated gene;
                                                                                                                                                                                                                                                                                                                                                                  Hormone-regulated Repro-PC-1.0 gene.
                                                                                                                                                                                                                                                                                                                                                                                                     21-DEC-1998 (first entry)
                               (REPR-) REPROGEN INC.
                                                                                                                06-MAR-1998;
                                                                                                                                                 11-SEP-1998.
                                                                                                                                                                                  W09839661-A1
                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                human; synaptotagmin; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAAGGAAAAATGTTAATGAATAGAGAGATCATCAAGAGAAATGTTAGGA 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuProLysSe 317
                                                                97US-0047811
97US-0041246
                                                                                                                98WO-US04519
                                                                                                                                                                                                                                  Location/Qualifiers 151..1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1100
```

```
alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-680-121-2 x AAV57327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  female LNCaP tumour cDNA. The probe was used to perform a primary screen of a lambda-ZAP-male-LNCaP tumour cDNA library. Positive plaques were subjected to secondary and then tertiary screens using male- and female-specific probes to isolate partial clone male- and female-specific probes to isolate partial clone library and RACE-PCR yielded a sequence containing a single 1275 open reading frame encoding 425 amino acids (see AAW75782). The encoded protein has regions of homology to the C2 regulatory domain of calcium-dependent isoforms of protein kinase C and to isoforms of synaptotagmin. The gene was localised to chromosome 18. The invention provides methods of identifying hormone-regulated traits in a cell. The methods involve cultivating the cell as a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Identification of hormone-regulated traits, e.g. in cancers exposing grafts of biological material to different hormonal environments in animals of different reproductive states {\bf r}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This nucleotide sequence represents a hormone-regulated gene from human prostate cancer cells. In order to isolate sequences that are over-expressed in male LNCaP tumours, a male-LNCaP-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       graft in 2 different hormonal environments and determining whether expression of the trait differs in the 2 grafts. The methods can be used to identify hormonally-regulated traits and hormonally-regulated genes for use as targets for therapeutic intervention in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           probe was generated by 3 rounds of subtractive hybridisation with female LNCaP tumour cDNA. The probe was used to perform a primar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; Page 59-62; 85pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1998-506379/43.
P-PSDB; AAW75782.
                             101
                                                                            401
                                                                                                                                                                               351
                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           disease states, particularly cancers.
                                                                                                                            84
                                                                                                                                                                                                                            67
                                                                                                                                                                                                                                                                                                                                   51
                                                                                                                                                                                                                                                                                                                                                                                                                laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1ValGlyIlePheSerAlaPheGlyLeuValPheThrValSerLeuPheA
                                                                          TyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLe
                                                                                                                                                                                                                                                                                                                                                                                      CATGGATCTGCTGTCAGAGAAAATCATCCAAGTCTAACAAGACTCCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACAAGTTTGTGCATGTGCTTAAGGGAGTTGATATTTACCCTGAAAACCT
LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs
                                                                                                                                                                               AAATAGCAAAAAGTTTGGAGCAGATGATAAAAATGAAGTAAAGAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAV57327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2201.00
5.179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Α;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Identity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to: 3891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₽.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              other;
                                                                                                                            100
                                                                            450
                                                                                                                                                                                                                                                                                 350
                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                     50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  þу
```

```
1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GluLysLysHisLysValLysThrArgValLeuArgLysThrLeuAspPr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys
GlyGlyGluHisTrpLysGluIleCysAspTyrProArgArgGlnIleAl
                                                                                                                                                                                                                                                                                                                                                                                 ThrasnThrLeuThrValValValLeuLysalaargHisLeuProLysSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ysSerSerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTTTTGATGAGACCTTTACATTCTATGGGATACCCTACACCCAAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OAlaPheAspGluThrPheThrPheTyrGlyILeProTyrThrGlnIleG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ### ATGAGCAGTCGATGACCTCTGACCCATATATCAAAATGACGATCCTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  spGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGAGAAGCTGGGAACTCTCTTCTTCTTCTTAGAATACAACTTCGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCTGGAGAATGCAACCCCGAAGCTCTTTTTAGAAGGGGGAAAAAGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV
                                                                              rgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThr
                                                                                                                                                                                                                                          AsnAlaValPheAsnGluLeuPheValPheAspIleProCysGluGlyLe
                                                                                                                                                                                                                                                                                                       CCAAAAAGAGAATCTCCAAGAAGAAGACTCATGTGAAGAAATGCACCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rGluGlyLysMetLeuMetAsnArgGluIleIleLysArgAsnValArgL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGATATCATTGGGGAAGTTCTAATTCCTCTCTCGGGAATTGAATTATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AspAspIleIleGlyGluValLeuIleProLeuSerGlyIleGluLeuSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTCCCCTGAGAGTTTAAAGTCCAGCACTTCCCTTACTTCAGAAGAGAAA
                                                             GAAATGAGGTAATCGGGCAGTTAGTCTTGGGTGCAGCAGCAGAAGGAACT
                                                                                                                                         TGAAGATATAAGTGTTGAATTTTTGGTTTTTGGATTCTGAAAGGGGGGTCCC
                                                                                                                                                              uGluAspIleSerValGluPheLeuValLeuAspSerGluArgGlySerA
                                                                                                                                                                                                                                                                                                                        laLysLysArgIleSerLysLysThrHisValLysLysCysThrPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGGAAAAATGTTAATGAATAGAGAGATCATCAAGAGAAATGTTAGGA
                                                                                                                                                                                                                         AATGCAGTGTTCAATGAGCTGTTTGTCTTTGATATTCCTTGTGAGGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTCTTCAGGACGGGGTGAGTTACTGATCTCTCTCTGCTATCAGTCCACC
                                                                                                                                                                                                                         1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1000
                                                                                                     400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    234
```

aLysTrpHisValLeuCysAspGly 425

CAAGTGGCACGTGCTGTGATGGT 1425

```
Seq_documentation_block:
ID AAIS8733 standard; cDNA; 5310 BP.
XX
AC AAIS8733;
XX
AAIS8733;
XX
C AAIS8733;
XX
C AAIS8733;
XX
DE Human polynucleotide SEQ ID NO 936.
XX
Human; nootropic; immunosuppressant kw peripheral nervous system; neuropatil kw Alzheimer's; Parkinson's disease; Hi amyotrophic lateral solerosis; Shytichemokinetic; thrombolytic; drug sc: Kw leukaemia; ss.
XX
AS 26-JUL-2001; 2000WO-US34263.
XX
C 26-DEC-2000; 2000WS-0488725.
PN W0200153312-A1.
XX
Z1-JAN-2000; 2000US-0488725.
PR 25-AER-2000; 2000US-0559317.
PR 25-AER-2000; 2000US-0559317.
PR 09-JUL-2000; 2000US-0559317.
PR 09-JUL-2000; 2000US-0559317.
PR 19-JUL-2000; 2000US-053450.
PR 19-JUL-2000; 2000US-053450.
PR 19-JUL-2000; 2000US-053913.
PR 19-CCT-2000; 2000US-0539312.
PR 19-JUL-2000; 2000US-0539313.
PR 19-JUL-2000; 2000US-053313.
PR 19-JUL-2000; 2000US-053313.
PR 19-JUL-2000; 2000US-053313.
PR 19-JUL-2000; 2000US-053313.
PR 19-JUL-2000; 2000US-053315.
PR 19-JUL-2000; 2000US-053315.
PR 19-JUL-2000; 2000US-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI58733
                                                                                                                                                                                The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polypucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheiner's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activiny, inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and c. N.S. dispressors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance: peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; SNy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human polynucleotide SEQ ID NO 936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel nucleic acids and polypeptides, useful for treating disorders such as central nervous system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 1; SEQ ID NO 936; 10078pp; English.
            Sequence 5310 BP; 1421 A; 1237 C; 1236 G; 1416 T; 0 other:
                                                                                                                             The sequence data for this patent did not form part of the printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chen R, Ma Y,
, Xu C, Xue AJ,
R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qian XB,
, Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ren F,
Zhang ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wang
```

alignment_scores:

```
alignment_block:
US-09-680-121-2 x AAI58733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: AAI58733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
1040 TTCCTTGTCCTCAGCTTTGACCGCTTCTCGGGATGATGTCATTGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        511 GACCCTCAGCAACAAGAAGAAAATCATCAAAGTGCGGAGAGACAAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461 CCACCATACAAGTTTATTCACATGCTCAAAGGCATCAGCATATACCCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  411 TCTTTGTCTGGTCATGCTGCCACCAGCAGGAGAAGAAGAAGCACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311 ATGGCTGAGATCACCAATATCCGACCTAGCTTTGATGTGTCACCGGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   140 LysSerSerThrSerLeuThrSerGluGluLysGlnGluLysLeuGlyTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        693 ATGGGGAAGAACTAAGGAGCCCTATTACAAGCCTGACCCCTGGGGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 GGCCGGCCTCATCGGGGCCCTCTGTGCTGGTGTGTGTGTCTCGGTGACCG
                                                                                                                                                                                         940
                                                                                                                                                                                                                                     206
                                                                                                                                                                                                                                                                                     890
                                                                                                                                                                                                                                                                                                                                 190
                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                            173 snIleLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerMetThr 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        156 rLeuPhePheSerLeuGluTyrAsnPheGluArgLysAlaPheValValA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          743 AAA...ACCACCTCTCCATCATCTCCAGAGGAGGATGTCATGCTAGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17 lValGlyIlePheSerAlaPheGlyLeuValPheThrValSer.....L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa 17
                                                                                                                                                                                                                     lLysThrargValLeuargLysThrLeuaspProAlaPheaspGluThrP 223
                                                                                                                                                                                                                                                                                                             SerAspProTyrIleLysMetThrIleLeuProGluLysLysHisLysVa 206
                                                                                                                                                                                                                                                                                                                                                                                CAATCCAGGAGGCCCACGGGCTGCCAGTGATGACCAGACCCAGGGA 889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  uAsnLeuAsnSerLysLysLysPhe......GlyAlaAspA 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ProProTyrLysPheValHisValLeuLysGlyValAspIleTyrProGl
                                                                                                                            heThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHis 239
                                                                                                                                                                                                                                                                                     TCTGACCCCTACATCAAAATGACCATCCTTCCTGACAAACGGCATCGGGT 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTCACCTTCTCAGTGGACTATAACTTCCCGAAAAAAGCCCCTGGTGGTGA 839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .........PheLeuGluGlyGluLysGluSerValSerProGluSerLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGCCTAGCTCTGGATCTTGTATAGACCAATTACCCATCAAAATGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uLysProGlySerProSerAspLeuGluAsnAlaThrProLysLeu.... 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGGCCTGCTAAGCCGAGAC......AAAGATCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LeuAspLeuGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLe 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCCTGGGAGGGAAGGTGGACGTAGGAACCTGTTGGTGGACGCAGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      spLysAsnGluValLysAsnLysProAlaValProLysAsnSerLeuHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           euPheAlaTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThr 48
                                 PheThrIleLeuSerPheAspArgPheSerArgAspAspIleIleGlyGl
                                                                                                                                                                                         GAAGACCAGAGTGCTGCGGAAGACCCTGGACCCTGTGTTTGACGAGACCT
                                                                                              TCACCTTCTATGGCATCCCCTACAGCCAGCTGCAGGACCTGGTGCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quality: 1162.00
Ratio: 3.349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.3%
79.405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Identity: 52.403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to: 5310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         510
                                                                                                   1039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               789
```

```
seq.
                                                                                                                                                                                                                                                                                                                                                                                                           _documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1140
                                                           29-JUL-1999;
27-AUG-1999;
11-JAN-2000;
02-MAY-2000;
                                                                                                                                                                                                                                                                                               Human cDNA sequence SEQ ID NO:11566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        306
                (HELI-) HELIX RES INST
                                                                                                                                                                      07-FEB-2001.
                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                Human; primer;
                                                                                                                                                                                                                                                                                                                              26-JUN-2001
                                                                                                                                                                                                                                                                                                                                                                                           AAH14256 standard; cDNA; 2315
                                                                                                                                       28-JUL-2000; 2000EP-0116126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SerLysLysThrHisValLysLysCysThrProAsnAlaValPheAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGTAATCCTTATGTCAAGGTGAACGTCTACTACGGCAGAAAGCGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GluLeuLeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                uValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLysMetLeuM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCTGAGCGAG 1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alLeuCysAsp 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlyGlnLeuValLeuGlyAla...AlaAlaGluGlyThrGlyGlyGluHi 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alGluPheLeuValLeuAspSerGluArgGlySerArgAsnGluValIle 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCAAGAAGAAACCCATGTGAAGAAGTGCACTTTGAACCCCCATCTTCAA 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           er...AspProTyrValLysValAsnLeuTyrHisAlaLysLysArgIle 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGGTCCTCAAAGCCAGACACTTGCCGAAGATGGATATCACCGGTCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     lValValLeuLysAlaArgHisLeuProLysSerAspValSerGlyLeuS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGCTCCAGGTGTCTGTCATATCAGCCTGTGGCACAGAGAATGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGACCAGGGACATCATCAAAAGGAATATCCAGAAGTGCATCAGCAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                etAsnArgGluIleIleLysArgAsnValArgLysSerSerGlyArgGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sTrpLysGluIleCysAspTyrProArgArgGlnIleAlaLysTrpHisV 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGAGGCTGATCCTGGGGGGCACACAGTGTCACAGCCAGTGGTGCTGAACA 1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGAGTTCCTCGTTATCGACTTCGATCGCACCACCAAGAATGAGGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nGluLeuPheValPheAspIleProCysGluGlyLeuGluAspIleSerV 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTCATGGTGCCACTGGCAGGGGTGGACCCCCAGCACAGGCAAGGTACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                     /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AAH14256
                                           99JP-0300253.
2000JP-0118776.
2000JP-0183767.
2000JP-0241899.
                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                         99JP-0248036
                                                                                                                                                                                                                                                                detection; diagnosis; antisense therapy; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    306
```

```
sequence and an oligonucleotide comprising a sequence complementary to a polynucleotide which comprises a 3'-end sequence, where the coligonucleotide comprises at least 15 nucleotides and the combination of the 5'-end sequence/3'-end sequence is selected from those defined in the specification. The primers sets can be used in antisense therapy and in gene therapy. The primers are useful for synthesising polynucleotides, particularly full-length cDNAs. The primers are also useful for the detection and/or diagnosis of the abnormality of the proteins encoded by the full-length cDNAs. The primers allow obtaining of the full-length cDNAs easily without any specialised methods. AAH03165 to AAH13628 and AAH3638 To AAH18742 represent human cDNA sequences; AAB92446 to AAB95893 represent human amino acid sequences; AAB9246 to AAH13632 represent oligonucleotides, all of which are used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                oligonucleotide comprises at least 15 nucleotides; or (b) a combination of an oligonucleotide comprising a sequence complementary to the complementary strand of a polynucleotide which comprises a 5'-end
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ota T, :
Ishii S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    comprises: (a) an oligo-dT primer and an oligonucleotide complementary to the complementary strand of a polynucleotide which comprises one of the 5602 nucleotide sequences defined in the specification, where the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention describes primer sets for synthesising 5602 full-length cDNAs defined in the specification. Where a primer set
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and/or diagnosis of full-length cDNAs -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Primer sets for synthesizing polynucleotides, particularly the 5602 full-length cDNAs defined in the specification, and for the detection and/or diagnosis of the abnormality of the proteins encoded by the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Isogai T,
, Sugiyama
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID 11566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nishikawa T,
T, Wakamatsu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2537pp + CD ROM; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hayashi K, S
A, Nagai K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Saito K, Y
(, Otsuki T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Yamamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         detection by the
```

alignment_scores: alignment_block: Align seg 1/1 to: US-09-680-121-2 x AAH14256 Percent Similarity: Quality: Ratio: AAH14256 : 1159.00 : 3.350 79.176 from: 1 Percent Identity: ţo: Length: 52.403

Sequence 2315 BP;

585 A;

600

ç; 570

.. ი

560 T;

0 other;

196 ATGGCTGAGATCACCAATATCCGACCTAGCTTTGATGTCACCGGTGGT 245

296 TCTTTGTCTGGTCATGCTGCCACCAGCAGGCAGAGAAGAAGCACAAGAGC 32 euPheAlaTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThr 48

345

49 ProProTyrLysPheValHisValLeuLysGlyValAspIleTyrProGl

446 GTCCTGGGAGGGAAGGTGGACGTAGGAACCTGTTGGTGGACGCAGCAGAG spLysAsnGluValLysAsnLysProAlaValProLysAsnSerLeuHis

LeuAspLeuGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLe

```
1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1025
                                                                    1325 TCGAGTTCCTCGTTATCGACTTCGATCGCACCACCAAGAATGAGGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  925
389 GlyGlnLeuValLeuGlyAla...AlaAlaGluGlyThrGlyGlyGluHi 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               173 snlleLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerMetThr 189 :::|||:::|||||::::||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       675 CCTCACCTTCTCAGTGGACTATAACTTCCCGAAAAAAGCCCCTGGTGGTGA 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     156 rLeuPhePheSerLeuGluTyrAsnPheGluArgLysAlaPheValValA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          578 ATGGGGAAGAACTAAGGAGCCCTATTACAAGCCTGACCCCTGGGGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      496 GCTGGCCTGCTAAGCCGAGAC......AAAGATCCCAG
                                                                                                                                 alGluPheLeuValLeuAspSerGluArgGlySerArgAsnGluValIle 388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         lValValLeuLysAlaArgHisLeuProLysSerAspValSerGlyLeuS 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     etAsnArgGluIleIleLysArgAsnValArgLysSerSerGlyArgGly 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   uValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLysMetLeuM 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      heThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHis 239
                                                                                                                                                                                                  nGluLeuPheValPheAspIleProCysGluGlyLeuGluAspIleSerV 372
                                                                                                                                                                                                                                                                                                                                    GCCAAGAAGAAACCCATGTGAAGAAGTGCACTTTGAACCCCATCTTCAA 1274
                                                                                                                                                                                                                                                                                                                                                                                 SerLysLysThrHisValLysLysCysThrProAsnAlaValPheAs 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GluLeuLeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrVa 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACCAGGGACATCATCAAAAGGAATATCCAGAAGTGCATCAGCAGAGGG 1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PheThrIleLeuSerPheAspArgPheSerArgAspAspIleIleGlyGl 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lLysThrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrP 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SerAspProTyrIleLysMetThrIleLeuProGluLysLysHisLysVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATCCAGGAGGCCCACGGGCTGCCAGTGATGACCAGGACCCAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGGCCTAGCTCTGGATCTTGTATAGACCAATTACCCCATCAAAATGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGTAATCCTTATGTCAAGGTGAACGTCTACTACGGCAGAAAGCGCATT 1224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              er...AspProTyrValLysValAsnLeuTyrHisAlaLysLysArgIle 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTGGTCCTCAAAGCCAGACACTTGCCGAAGATGGATATCACCGGTCTCT 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCTCCAGGTGTCTCTGTCATATCAGCCTGTGGCACAGAGAATGACAGT 1124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTCATGGTGCCACTGGCAGGGGGGGGGGGCACCCCAGCACGGCAAGGTACAAC 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCCTTGTCCTCAGCTTTGACCGCTTCTCTCGGGATGATGTCATTGGCGA 974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCACCTTCTATGGCATCCCCTACAGCCAGCTGCAGGACCTGGTGCTGCAC 924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGACCAGAGTGCTGCGGAAGACCCTGGACCCTGTGTTTGACGAGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAA...ACCACCTCTCCATCATCTCCAGAGGAGGATGTCATGCTAGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LysSerSerThrSerLeuThrSerGluGluLysGlnGluLysLeuGlyTh 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uLysProGlySerProSerAspLeuGluAsnAlaThrProLysLeu.... 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTGACCCCTACATCAAAATGACCATCCTTCCTGACAAACGGCATCGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .........PheLeuGluGlyGluLysGluSerValSerProGluSerLeu 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         674
```

```
seq_documentation_block:
ID AAI60519 standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AA160519
                                                                                                                                                                                                                                                                                                                                       21-JAN-2000; 2000US-0488725.

25-APR-2000; 2000US-0552317.

09-UUL-2000; 2000US-0598042.

19-JUL-2000; 2000US-0620312.

03-AUG-2000; 2000US-0653450.

14-SEP-2000; 2000US-0652191.

19-CCT-2000; 2000US-0693036.

29-NOV-2000; 2000US-0727344.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1475 GTCTGAGCGAG 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1375 GGGAGGCTGATCCTGGGGGCACACAGTGTCACAGCCAGTGGTGCTGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer;s; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404 STrpLysGluIleCysAspTyrProArgArgGlnIleAlaLysTrpHisV 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human polynucleotide SEQ ID NO 4508.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421 alLeuCysAsp 424
                                                                                                                                                                                                                                                                                                                 (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                               26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26-JUL-2001.
                                                                                                                                                                                                                                                                    y YT, Liu C,
y J, Wang z,
o QA, Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGGAGAGAGGTCTGCGAGAGCCCCCGCAAGCCTGTGGCCAAGTGGCACA 1474
                                                                                                                                                                                                                                    2001-442253/47.
DB; AAM41363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                    Asundi V, Ch
Wehrman T, XI
, Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5517
                                                                                                                                                                                                                                                                     Chen R, Ma Y,
, Xu C, Xue AJ,
R, Drmanac RT;
                                                                                                                                                                                                                                                                               Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                               Ren F, 1
Zhang J;
                                                                                                                                                                                                                                                                                          Wang
                                                                                                                                                                                                                                                                                          Ö
```

The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cycostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and shy-Drager Syndrome. Other uses include the utilisation of the activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and

Claim 1; SEQ ID NO 4508; 10078pp; English.

Novel nucleic acids and polypeptides, useful for treating such as central nervous system injuries -

disorders

assays for receptor activity, arthritis and inflammation, leukaemias C.N.S disorders.

data

for

this

patent did

not

form

part

of.

the printed

```
alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SXSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_block:
US-09-680-121-2 x AAI60519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: AAI60519
                                                                                                                                                                        1048
                                                                                                                                                                                                                                                                                                                951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    519
                                                                                                                                                                                                                                               998
                                                                                                                                                                                                                                                                              156
                                                                                                                                                                                                                                                                                                                                                   140
                                                                                                                                                                                                                                                                                                                                                                                    901 ATGGGGAAGAACTAAGGAGCCCTATTACAAGCCTGACCCCTGGGGAGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                        126
                                                                                                                                                                                                                                                                                                                                                                                                                                                          851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          619 TCTTTGTCTGGTCATGCTGCCACCAGCAGGCAGAGAAGAAGCACAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 5517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Note: The sequence specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94 LeuAspLeuGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLe 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa
                                                                                                                     SerAspProTyrIleLysMetThrIleLeuProGluLysLysHisLysVa
                                                                                                                                                                                          snIleLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerMetThr
::|||:::|||||::::|
                                                                                                                                                                                                                                        uLysProGlySerProSerAspLeuGluAsnAlaThrProLysLeu.... 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGGCCTGCTAAGCCGAGAC......AAAGATCCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ProProTyrLysPheValHisValLeuLysGlyValAspIleTyrProGl 65
|||||||||||||||||
CCACCATACAAGTTTATTCACATGCTCAAAGGCATCAGCATATACCCAGA 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  euPheAlaTrpIIeCysCysGlnArgLysSerSerLysSerAsnLysThr 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGGCTGAGATCACCAATATCCGACCTAGCTTTGATGTGTCACCGGTGGT
heThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHis
                                  GAAGACCAGAGTGCTGCGGAAGACCCTGGACCCTGTGTTTGACGAGACCT
                                                    lLysThrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrP
                                                                                                   TCTGACCCCTACATCAAAATGACCATCCTTCCTGACAAACGGCATCGGGT 1147
                                                                                                                                                                      CAATCCAGGAGGCCCACGGCCTGCCAGTGATGATGACCAGACCCAGGGA 1097
                                                                                                                                                                                                                                                                                                                AAA...ACCACCTCTCCATCATCTCCAGAGGAGGATGTCATGCTAGGATC
                                                                                                                                                                                                                                                                                                                                                 LysSerSerThrSerLeuThrSerGluGluLysGlnGluLysLeuGlyTh 156
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGGCCTAGCTCTGGATCTTGTATAGACCAATTACCCATCAAAATGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCCTGGGAGGGAAGGTGGACGTAGGAACCTGTTGGTGGACGCAGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCCGGCCTCATCGGGGCCCTCTGTGCTGGTGTGTGTGTCTCGGTGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lValGlyIlePheSerAlaPheGlyLeuValPheThrValSer..... 32
                                                                                                                                                                                                                                                                                                                                                                                                                    .....PheLeuGluGlyGluLysGluSerValSerProGluSerLeu 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 spLysAsnGluValLysAsnLysProAlaValProLysAsnSerLeuHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACCCTCAGCAACAAGAAGAAATCATCAAAGTGCGGAGAGACAAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1154.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.335
79.176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1274 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1294 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1469 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52.174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               618
239
                                                                                                                                      206
                                                                                                                                                                                                                                                                                                                997
                                                                                                                                                                                                                                                                                                                                                                                    950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                   223
```

```
seq_documentation_block:
ID AAT29743 standard;
                                                                                                                                                                                                                                                                                                                                                seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA1996.DAT:AAT29743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1298
                                                                                                                                                                                                                                                                                                                                                                                     1798 GTCTGAGCGAG 1808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       404 sTrpLysGluIleCysAspTyrProArgArgGlnIleAlaLysTrpHisV 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           372
                                                                                                          Synaptogamin; antagonist; inhibitor; neurotransmitter; hormone; calcium release; inositol; polyphosphate; pentakisphosphate; hexakisphosphate; tetrakisphosphate; binding protein; IP4-BP; PCR primer; polymerase chain reaction; murine; ds.
                                                                            Mus musculus
                                                                                                                                                                                              Mouse inositol polyphosphate binding protein IP4-BP
                                                                                                                                                                                                                                                                  AAT29743;
                                                                                                                                                                                                                                 29-APR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                   alLeuCysAsp 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lValValLeuLysAlaArgHisLeuProLysSerAspValSerGlyLeuS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                etAsnArgGluIleIleLysArgAsnValArgLysSerSerGlyArgGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   uValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLysMetLeuM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGAGAGAGGTCTGCGAGAGCCCCCGCAAGCCTGTGGCCAAGTGGCACA 1797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGAGGCTGATCCTGGGGGCACACAGTGTCACAGCCAGTGGTGCTGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GlyGlnLeuValLeuGlyAla...AlaAlaGluGlyThrGlyGlyGluHi 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGAGTTCCTCGTTATCGACTTCGATCGCACCACCAAGAATGAGGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alGluPheLeuValLeuAspSerGluArgGlySerArgAsnGluVallle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCAAGAAGAAACCCATGTGAAGAAGTGCACTTTGAACCCCATCTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SerLysLysThrHisValLysLysCysThrProAsnAlaValPheAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGTAATCCTTATGTCAAGGTGAACGTCTACTACGGCAGAAAGCGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             er...AspProTyrValLysValAsnLeuTyrHisAlaLysLysArgIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTGGTCCTCAAAGCCAGACACTTGCAGAAGATGGATATCGCCGGTCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCTCCAGGTGTCTCTGTCATATCAGCCTGTGGCACAGAGAATGACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GluLeuLeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACCAGGGACATCATCAAAAGGAATATCCAGAAGTGCATCAGCAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTCATGGTGCCACTGGCAGGGTGGACCCCAGCACAGGCAAGGTACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PheThrIleLeuSerPheAspArgPheSerArgAspAspIleIleGlyGl
                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                   CDNA
                                                                                                                                                                                                                                                                                                 ç
                                                                                                                                                                                                                                                                                                   mRNA;
                                                                                                                                                                                                                                                                                                   1876
                                                                                                                                                                                                                                                                                                   ВP
                                                                                                                                                                                               gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            323
```

CDS

/*tag= a /product= IP4BP Location/Qualifiers 16..1284

```
alignment_scores:
Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_block:
US-09-680-121-2 x AAT29743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: AAT29743 from: 1 to: 1876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Degenerate primers (see AAT29741 and AAT29742) were designed based on peptide fragments from the inositol polyphosphate binding protein IP4BP isolated from ddy mouse cerebellum. The primers were used for PCR amplification of the mouse IP4BP gene (see AAT29743). The C2A domain at the C-terminal end of IP4BP contains the synaptogamin II peptide. A consensus sequence was obtained from a comparison of synaptogamin peptides from a variety of species. Peptides comprising the consensus motif (see AAR97721) are able to bind to inositol tetrakisphosphate; inositol pentakisphosphate and inositon hexakisphosphate; such peptides can inhibit neurotransmitter release
                                                                                                                                                                                                                                                       322 .....AAAGGCATG.....AAGAACGCCATGAACAT 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Inositol poly:phosphate (IPP)-binding peptide - useful as an inhibitor of calcium, neuro:transmitter release or hormone release and for identifying IPP antagonists
                                         103 GlyAsnPheProLysThrAsnLeuLysProGlySerProSerAspLeuGl 119
                                                                                                                                                                    184 GAGATCAACAAGATCCCCTTGCCCCCCTGGGCTCTGATCGCCATGGCTGT 233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1876 BP; 481 A; 491 C; 504 G; 400 T; 0 other;
                                                                                                                                                                                                                                                                                    53 PheValHisValLeuLysGlyValAspIleTyrProGluAsnLeuAsnSe 69
                                                                                                                                                                                                                                                                                                                                          234 GGTTGCTGCCTCCTGCTCACCTGTTGCTTCTGCATCTGTAAGAAGT 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and hormone release and are calcium inhibitors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 8; Page 12-14; 19pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1996-236100/24.
P-PSDB; AAR97722.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (SOSE-) SOSEI KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-SEP-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-SEP-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-APR-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JP08092290-A
                                                                                                                                                                                                             69 rLysLysPheGlyAlaAspAspLysAsnGluValLysAsnLysProA 86
                                                                                                                                                                                                                                                                                                                                                                                    36 leCysCysGlnArgLysSerSerLysSerAsnLysThrProProTyrLys 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 GluPheAspGluIlePro......ThrValValGlyIlePheSe 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22 rAlaPheGlyLeuValPheThrValSerLeuPheAla.....TrpI 36
...........GAGACAGGCCTGACTGAAGGA.........
                                                                                                                          laValProLysAsnSerLeuHisLeuAspLeuGluLysArgAspLeuAsn 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94JP-0252942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94JP-0252942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   604.00
2.359
60.664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length: 422
Gaps: 12
Percent Identity: 36.256
```

	STroHisVallen 422	418
N	::: :::::::::::::::::::::::::::::	7
418	GlyGluHisTrpLysGluIleCysAspTyrProArgArgGlnIleAlaL	402
401 1176	5 snGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThrGly	385 1127
385 1126	uAspIleSerValGluPheLeuValLeuAspSG 	368 1077
368 1076	2 AlaValPheAsnGluLeuPheValPheAspIleProCysGluGlyLeuGl 	352 1027
351 1026	5 ysLysArgIleSerLysLysLysThrHisValLysLysCysThrProAsn :::::	335 977
335 976	<pre>B pValSerGlyLeuSerAspProTyrValLysValAsnLeuTyrHisAlaL ::: </pre>	318 927
318 926	2 AsnThrLeuThrValValLeuLysAlaArgHisLeuProLysSerAs ::: ::: ::: :::	302 877
301 876	SerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnS ::: :::::	286 827
285 826) yLysMetLeu.MetasnArgGluIleIleLysArgAsnValArgL 	269 777
269 776	3 IleIleGlyGluValLeuIleProLeuSerGlyIleGluLeuSerGluGl 	253 733
252 732	6 euAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArgAspAsp 	236 683
236 682	9 eAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGluL ::: CAATGAGACATTCACTTTCAAGGTGCCATACCAGGAGTTAGGAGGCA	219 636
219 635	3 LysHisLysValLysThrargValLeuArgLysThrLeuAspProAlaPh 	203 586
202 585	6 lnSerMetThrSerAspProTyrIleLysMetThrIleLeuProGluLys :::::	186 536
186 535	9 aPheValvalAsnIleLysGluAlaArgGlyLeuProAlaMetAspGluG ::::: ::: :::	169 489
169 488	LysLeuGlyTh:::: AACCTGGGCAA	153 439
152 438	roGluSerLeuLysSerSerThrSerLeuThrSerGluGluLysG	136 421
420	UNSHINTER THE PROPERTY OF THE	406
J	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	_

418 sTrpHisValLeu 422

GIGGCACTCTCTT 1239

```
seq_documentation_block:
ID AAI59409 standard; cll
XC AAI59409;
AC AAI59409;
XC AAI59409;
XX AAI59409;
XX Parkinson and polynucleotide
XX Human; nootropic; imm
XX Parkinson amyotrophic lateral s
XX Human; nootropic; imm
XX Parkinson amyotrophic lateral s
XX Chemokinetic; thrombo
XX Homo sapiens.
XX W0200153312-A1.
XX 26-DEC-2000; 2000W0-U
XX 27-JAN-2000; 2000W5-Q
PR 25-APR-2000; 2000W5-Q
PR 25-APR-2000; 2000W5-Q
PR 29-NOV-2000; 2000W5-Q
PR 19-JUL-2000; 2000W5-Q
PR 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-JAN-2000; 2000US-0488725.

25-APR-2000; 2000US-0552317.

09-JUL-2000; 2000US-0598042.

19-JUL-2000; 2000US-0620312.

03-AUG-2000; 2000US-0653450.

14-SEP-2000; 2000US-0662191.

19-CCT-2000; 2000US-06939036.

29-NOV-2000; 2000US-0727344.
                                                                                                                                                                                                   The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathies and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager Syndrome. Other uses include the utilisation of the activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, and the procedure of the contribution of the activity, cancer diagnosis and therapy, drug screening, and thrombolytic activity, cancer diagnosis and therapy, drug screening, and the procedure of the contribution of the contribution of the contribution of the contribution of the activity, cancer diagnosis and therapy, drug screening, and thrombolytic activity, cancer diagnosis and therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human polynucleotide SEQ ID NO 1612
                                                                       Note: The sequence data specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel nucleic acids and polypeptides, useful such as central nervous system injuries -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2001-442253/47.
P-PSDB; AAM40253.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-DEC-2000; 2000WO-US34263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI59409
                                                                                                                                                                          for receptor activity, arthritis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 1612; 10078pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Asundi V, C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cDNA; 1647
                                                                                                          for this patent did not form part of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chen R,
Xu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drmanac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ma Y,
Xue AJ,
anac RT;
                                                                                                                                                                              and inflammation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qian XB,
Yang Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for treating disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ren F,
Zhang
                                                                                                                                                                                 leukaemias
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ç.
                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cancer;
                                                                                                          printed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ö
```

385

Ą;

474

ç;

431 G;

357

Τ.

0

alignment_scores:

alignment_block: US-09-680-121-2 x AAI59409 Align seg 1/1 to: AAI59409 Percent Similarity: 357 477 442 399 142 576 AGCGCCAAGAAGGAGCCCATCCAACCTTCGGTGCTCAGACGGACCTATAA 625 532 GCTCTCCA.....CTCATCGATATTAAACCCATCGAGTTTGGCGTTCTC 113 lySerProSerAspLeuGluAsnAlaThrProLysLeuPhe....Leu 515 TGAGTCAAGA. 246 AspArgPheSerArgAspAspIleIleGlyGluValLeuIleProLeuSe 776 CCACCTCACCGTGCGCGTGATCGAGGCCAGGGACCTGCCACCTCCCATCT 676 CCAACAGCGACGATGTGGACTCTCTGACAGACGAGGAGATCCTGTCCAAG 128 GluGlyGluLysGluSerValSerProGluSerLeuLysSerSer..... 168 sAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMet.... 152 GluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLy 96 85 51 rLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLeuA TGGCTGATGGCCAGCCGGAGCAGTGACAAGGATGGTGACTCT..... CCCACGATGGCTCGCGCCAGGACATGGCGCACTCCAACCCCTACGTCAAG TACCAGCTGGGCATGCTGCACTTCAGCACTCAGTACGACCTGCTGCACAA CCCCGACGACTATTTCAGGAAGTTCGAACCCCACCTGTACTCCCTCGACT uGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLeuLysProG CCCCGGATGGAAGACGCTCGTCCTCAGACACATCC snSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnLys TrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProProTy GATAAGTTCTCCCGCCACTGTGTCATTGGGAAAGTTTCTGTGCCTTTGTG CAAGACCCAGAAGCCCGTGTTTGAGGAGCGCTACACCTTC...GAGATCC MetThrIleLeuProGluLysLysHisLysValLysThrArgValLeuArGTCCACACGGCCAGCGAAGTCCCGCTGACCCCACGGACCAATT 441 roTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerPhe gLysThrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyIleP ATCTGTCTCCTGCCAGACCAGAAGAACTCAAAGCAGACCGGGGTCAAACGAspGluGlnSerMetThr...SerAspProTyrIleLysAAGTCTACATACAGCCTGACGCGGAGGATTTCGAGTCT ProAlaValProLysAsnSerLeuHisLeu.....AspLe CCTTCCTGGAGGCCCCAGAGGAGGACCCTGCTCCTGACCGTGGTGGATTTT Quality: Ratio: 464.50 1.822 58.087ThrSerLeuThrSerGluGlu.....LysGln from: 1 Percent Identity: to: Length: Gaps:CGTCCCA 30. 531 262 1022 972 142 84 51 1072 925 875 195 183 775 168 151 675 142 575 127 113 514 476 68 398 245 212 725

```
seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA2000.DAT:AAC76182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1205 CATTCGAGCCAAGCAACTTCTTCAGACAGGTGGAGCCAAGGTTCAGACC 1254
     Human; open reading frame; ORFX; detection; cytostatic; hepatotropic; vulnerary; antipsoriatic; antiparkinsonian; nootropic; neuroprotective; anticonvulsant; osteopathic; antiarthritic; immunosuppressant; cardiant; immunostimulant; thrombolytic; coagulant; vasotropic; antidabetic; hypotensive; dermatological; immunosuppressive; antiinflammatory; antiviral; antibacterial; antifungal; antirheumatic; antithyrold; antianaemic; gene therapy; cancer; proliferative disorder; hypoetension; neurodegenerative disorder; osteoarthritis; graft vs host disease; cardiovascular disease; diabetes mellitus; hypothyroiddism; SCID; AIDS; cholesterol ester storage; systemic lupus crythematosus; infection; severe combined immunodeficiency; malaria; autoimmune disorder; asthma; allergy; aplastic anaemia; nocturnal haemoglobinuria; burn; wound; bone damage; cartilage damage; antiinflammatory disease; coagulation; thrombosis; contraceptive; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human ORFX ORF1737 polynucleotide sequence SEQ ID NO:3473.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-FEB-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAC76182 standard; cDNA; 1660 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 407 uIleCysAspTyrProArgArgGlnIleAlaLysTrpHisValLeu.... 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                308 lLeuLysAlaArgHisLeuProLysSerAspValSerGlyLeuSerAspP 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    292 LeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrValValVa 308
thrombosis; contraceptive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATGCTCAACACGCACCGCACAGCCGTGGAGCAGTGGCATAGCCTGAGGT 1554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 roTyrValLysValAsnLeuTyrHisAlaLysLysArgIleSerLysLys 341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTCTGTCACTGAATTATCTCCCAAGTGCTGGCAGACTGAATGTTGATGT 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGTTGACCTGGTCAAGGGCGGGGCACTGGTGGAAGGCGCTGATT.... 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rGlyIleGluLeuSerGluGly.....LysMetLeuMetAsnA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTTTGTGAAAATCCAGCTGGTGCATGGACTCAAACTTGTGAAAACCAAG 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rgGluIleIleLysArgAsnValArgLysSerSerGlyArgGlyGluLeu 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGTTTTCGGCCACAACATGAAGAGCAGCAATGACTTCATCGGGAGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               euValLeuAspSerGluArgGlySerArgAsnGluValIleGlyGlnLeu 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGCTTCAAAGTTCCCCAAGAAGAACTGGAAAATGCCAGCCTAGTGTTTA 1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              eValPheAspIleProCysGluGlyLeuGluAspIleSerValGluPheL 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGACGTCCTTCTTAAGGGGCACAATTGATCCTTTCTACAATGAATCCTT 1354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LysThrHisValLysLysCysThrProAsnAlaValPheAsnGluLeuPh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCGAGCTGAGTGTGAC 1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .....CysAsp 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ValLeuGlyAlaAlaAlaGluGly...ThrGlyGlyGluHisTrpLysGl 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ....CCCAGTTCTCAGAATGAAGTGGAGCTGGGGGGAGCTG 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       358
```

ACC XXX ACC XX

```
alignment_block:
US-09-680-121-2 x AAC76182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A AAC74446 to AAC77606 encode the proteins given in AAB40237 to AAB43397, CC which represent the human ORFX open reading frames 1 to 3161. The ORFX CC sequences have activities such as: cytostatic; hepatotropic; vulnerary; CC antiporiatic; antiparkinsonian; nootropic; neuroprotective; CC immunostimulant; cardiant; thrombolytic; coagulant; vasotropic; cimunostimulant; cardiant; thrombolytic; coagulant; vasotropic; cc antidiabetic; hypotensive; dermatological; immunosuppressant; cc antityroid; and antianaemic. The sequences can be used for determining ct the presence of or predisposition. To, or preventing or treating ct the presence of or predisposition. To, or preventing or treating ct the presence of or predisposition. To, or preventing or treating crectors. The proteins associated with an ORFX associated disorder. The nucleic acids can be used to express ORFX proteins in gene therapy crectors. The proteins and nucleic acids may be used to treat cancers, crectoris, entry disorders, neurodegenerative disorders, osteoarthritis, creative shost disease, cardiovascular disease, diabetes mellitus, creative shost disease, cardiovascular disease, systemic lupus crythematosus, severe combined immunodeficiency (SCID), AIDS, viral, callergies, aplastic anaemia, burns, wounds, bone and cartillage damage, coagulation; to inhibit thrombosis; and as a contraceptive.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to: AAC76182 from: 1 to: 1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel nucleic acids and peptides derived from open reading frame X, useful for treating e.g. cancers, proliferative disorders, neurodegenerative disorders and cardiovascular disease -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31-MAR-1999; 99US-0127607
02-APR-1999; 99US-01277636
05-APR-1999; 99US-0127728
30-MAR-2000; 2000US-0540763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31-MAR-2000; 2000WO-US08621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-OCT-2000
                                                                                                                                                                                                                                                                  337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 5; Page 2646-2647; 5507pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shimkets RA,
                                                                                    422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1660 BP; 393 A; 468 C; 436 G; 363 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CURA-) CURAGEN CORP.
                                                                                                                               8
                                        85 ProAlaValProLysAsnSerLeuHisLeu.....AspLe
                                                                                                                                                                                                                 51 rLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLeuA 68
                                                                                                                                                                                                                                                                                                           35 TrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProProTy
                                                                                                                                                                        .....GTCCACACGGCCAGCGAAGTCCCGCTGACCCACGGACCAATT
                                                                                                                                                                                                                                                                  TGGCTGATGGCCAGCCGGAGCAGTGACAAGGATGGTGACTCT......
                                                                                    CCCCGGATGGAAGACGCTCGTCCTCAGACACATCC.
                                                                                                                             snSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000-602362/57.
DB; AAB41973.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Leach M;
. AAGTCTACATACAGCCTGACGCGGAGGATTTCGAGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 464.50
1.822
58.087
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length: 439
Gaps: 15
Percent Identity: 30.296
     494
                                                                                                                                                                                421
```

```
1235
                                                                                                                                                               1185
                                                                                                                                                                                                                                                                                                                             1099
                                                                                                                                                                                                                                                                                                                                                                                                           1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1003
                                                                                                                                                                                                                                                                                                                                                                   275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GluGlyGluLysGluSerValSerProGluSerLeuLysSerSer....
                                    LysThrHisValLysLysCysThrProAsnAlaValPheAsnGluLeuPh 358
                                                                                                                                                                                                                                                                   LeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrValValVa
||||:::|||||
                                                                                                                                                                                                                                                                                                                                                                                                       TGAAGTTGACCTGGTCAAGGGCGGCGCACTGGTGGAAGGCGCTGATT....
                                                                                                                                                                                                                                                                                                                                                                                                                                   rGlyIleGluLeuSerGluGly......LysMetLeuMetAsnA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gLysThrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyIleP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .....AspGluGlnSerMetThr...SerAspProTyrIleLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCACCTCACCGTGCGCGTGATCGAGGCCAGGGACCTGCCACCTCCCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACCAGCTGGGCATGCTGCACTTCAGCACTCAGTACGACCTGCTGCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAACAGCGACGATGTGGACTCTCTGACAGACGAGGAGATCCTGTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lySerProSerAspLeuGluAsnAlaThrProLysLeuPhe....Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAGTCAAGA......CGTCCCA
AAGACGTCCTTCTTAAGGGGCACAATTGATCCTTTCTACAATGAATCCTT
                                                                                                                roTyrValLysValAsnLeuTyrHisAlaLysLysArgIleSerLysLys
                                                                                                                                                           CATTCGAGCCAAGCAACTTCTTCAGACAGATGTGAGCCAAGGTTCAGACC
                                                                                                                                                                                                   lLeuLysAlaArgHisLeuProLysSerAspValSerGlyLeuSerAspP
                                                                                                                                                                                                                                            CTTCTGTCACTGAATTATCTCCCCAAGTGCTGGCAGACTGAATGTTGATGT 1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AspArgPheSerArgAspAspIleIleGlyGluValLeuIleProLeuSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTTCCTGGAGGCCCAGAGGAGGACCCTGCTCCTGACCGTGGTGGATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           roTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGACCCAGAAGCCCGTGTTTGAGGAGCGCTACACCTTC...GAGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCTGTCTCCTGCCAGACCAGAAGAACTCAAAGCAGACCGGGGTCAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MetThrIleLeuProGluLysLysHisLysValLysThrArgValLeuAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCACGATGGCTCGCGCCAGGACATGGCGCACTCCAACCCCTACGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMet....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCCCGACGACTATTTCAGGAAGTTCGAACCCCACCTGTACTCCCTCGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCGCCAAGAAGGAGCCCATCCAACCTTCGGTGCTCAGACGGACCTATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTCTCCA.....CTCATCGATATTAAACCCATCGAGTTTGGCGTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           uGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLeuLysProG
                                                                                                                                                                                                                                                                                                                                                                 rgGluIleIleLysArgAsnValArgLysSerSerGlyArgGlyGluLeu
                                                                                                                                                                                                                                                                                                                        ... CCCAGTTCTCAGAATGAAGTGGAGCTGGGGGAGCTG
                                                                                                                                                                                                                                                                                                                           1134
                                                                                                                                                                                                                                                                                                                                                                                                         1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           113
                                                                                                                  341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    555
                                                                                                                                                                                                                                                                                  308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               212
```

```
seq_documentation_block:
ID AAI61195 standard:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1485
                                                                                                                                                                                                                  21-JAN-2000;
25-APR-2000;
09-JUL-2000;
19-JUL-2000;
19-JUL-2000;
14-SEP-2000;
19-OCT-2000;
                                                                                                                                                    Tang
Wang
                                                                                                                                                                                                                                                                                                                                                                                                                Human; nootropic; immunosuppressant; cytostatic; gene therapy; cance peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              407
                                                                                                          WPI; 2001-442253/47.
P-PSDB; AAM42039.
                                                                                                                                                                                                                                                                                                                                                   WO200153312-A1
                                                                                                                                                                                                                                                                                                                                                                                                        chemokinetic; thrombolytic; drug screening; arthritis; inflammation;
                                                                         Novel nucleic acids and such as central nervous
                                                                                                                                                                                                                                                                                                        26-DEC-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human polynucleotide SEQ ID NO 5184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-OCT-2001
                                                                                                                                                                                   (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                              26-JUL-2001.
                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                             leukaemia; ss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGCTCAACACGCACCGCACAGCCGTGGAGCAGTGGCATAGCCTGAGGT 1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGTTTTCGGCCACAACATGAAGAGCAGCAATGACTTCATCGGGAGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCCGAGCTGAGTGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .....CysAsp 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           uIleCysAspTyrProArgArgGlnIleAlaLysTrpHisValLeu....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ValLeuGlyAlaAlaAlaGluGly...ThrGlyGlyGluHisTrpLysGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          euValLeuAspSerGluArgGlySerArgAsnGluValIleGlyGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCTTCAAAGTTCCCCCAAGAAGAACTGGAAAATGCCAGCCTAGTGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YT,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AA161195
                                                                                                                                       Liu C,
Wang Z,
Zhou P,
                                                                                                                                                                                                       2000US-0653450.
2000US-0662191.
2000US-0693036.
2000US-0727344.
                                                                                                                                                                                                                                                  2000US-0488725.
2000US-0552317.
2000US-0598042.
2000US-0620312.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                        2000WO-US34263
                                                                                                                                       Asundi V, Ch
Wehrman T, X
Goodrich R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cDNA; 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1551
                                                                       polypeptides, useful system injuries -
                                                                                                                                                              Chen
                                                                                                                                       Chen R, Ma Y,
Xu C, Xue AJ,
R, Drmanac RT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ВP
                                                                                                                                                   Qian >
                                                                                     for
                                                                                    treating
                                                                                                                                                    gγ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         407
                                                                                                                                                   Ren F,
Zhang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     391
                                                                                     disorders
                                                                                                                                                               'n
                                                                                                                                                     4
                                                                                                                                                             Wang
```

The invention relates to human nucleic acids (AAI57798-AAI61369) and the encoded polypeptides (AAM38642-AAM42213) with nootropic, immunosuppressant and cytostatic activity. The polynucleotides are useful in gene therapy. A composition containing a polypeptide or polynucleotide

ID NO

5184;

10078pp;

English

```
alignment_block:
US-09-680-121-2 x AAI61195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Align seg 1/1 to: AAI61195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of the invention may be used to treat diseases of the peripheral nervous system, such as peripheral nervous injuries, peripheral neuropathy and localised neuropathles and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and shy-Drager Syndrome. Other uses include the utilisation of the activities such as: Immune system suppression, Activiny, inhibin activity, chemotactic/chemokinetic activity, haemostatic and thrombolytic activity, cancer diagnosis and therapy, drug screening, assays for receptor activity, arthritis and inflammation, leukaemias and C.N.S disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          399
748 CCCACGATGGCTCGCGCCAGGACATGGCGCACTCCAACCCCTACGTCAAG 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1569 BP; 359 A; 461 C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           specification.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCACCTCACCGTGCGCGTGATCGAGGCCAGGGACCTGCCACCTCCCATCT
                                                                                                                                                                        sAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMet....
                                                                                                                                                                                                                                          TACCAGCTGGGCATGCTGCACTTCAGCACTCAGTACGACCTGCTGCACAA 697
                                                                                                                                                                                                                                                                                          GluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLy 168
                                                                                                                                                                                                                                                                                                                                                           CCAACAGCGACGATGTGGACTCTCTGACAGACGAGGAGATCCTGTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCCGACGACTATTTCAGGAAGTTCGAACCCCACCTGTACTCCCTCGACT 597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCGCCAAGAAGGAGCCCATCCAACCTTCGGTGCTCAGACGGACCTATAA 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GluGlyGluLysGluSerValSerProGluSerLeuLysSerSer.... 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTCTCCA.....CTCATCGATATTAAACCCATCGAGTTTGGCGTTCTC 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lySerProSerAspLeuGluAsnAlaThrProLysLeuPhe....Leu 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLeuLysProG 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLeuA 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGCTGATGGCCAGCCGGAGCAGTGACAAGGATGGTGACTCT..... 320
                                                       ......AspGluGlnSerMetThr...SerAspProTyrIleLys 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAGTCAAGA......CGTCCCA 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ProAlaValProLysAsnSerLeuHisLeu.....AspLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCCGGATGGAAGACGCTCGTCCTCAGACACATCC......398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               snSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnLys 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .....GTCCACACGGCCAGCGAAGTCCCGCTGACCCCACGGACCAATT 363
                                                                                                                                                                                                                                                                                                                                                                                                               .....AAGTCTACATACAGCCTGACGCGGAGGATTTCGAGTCT 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     442.50
1.729
58.182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from: 1 to: 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Identity: 30.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 409 G; 340 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                           647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96
```

```
1177
1477 GTCCCGAGCTGAGTGTGAC 1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1077
                                                                                                 1427 CGCATGCTCAACACGCACCGCACAGCCGTGGAGCAGTGGCATAGCCTGAG 1476
                                                                                                                                                                                                                                                                                                        1327 CAGTTTTCGGCCACAACATGAAGAGCAGCAATGACTTCATCGGGAGGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    196 MetThrIleLeuProGluLysLysHisLysValLysThrArgValLeuAr
                                            .....CysAsp 424
                                                                                                                                                                                                                                                  ValLeuGly..AlaAlaAlaGluGly...ThrGlyGlyGluHisTrpLys 406
                                                                                                                                                                                                                                                                                                                                                                                                         CAGCTTCAAAGTTCCCCCAAGAAGAACTGGAAAATGCCAGCCTAGTGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                    eValPheAspIleProCysGluGlyLeuGluAspIleSerValGluPheL 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lLeuLysAlaArgHisLeuProLysSerAspValSerGlyLeuSerAspP
|::::::||| ::::||| :::::||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rGlyIleGluLeuSerGluGly......LysMetLeuMetAsnA 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    roTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerPhe
                                                                                                                                                 GluIleCysAspTyrProArgArgGlnIleAlaLysTrpHisValLeu. 422
                                                                                                                                                                                                   GTCATTGGCCCAGTACTCTTCAGGCCCCCTCTGAGCCCAACCACTGGAGG 1426
                                                                                                                                                                                                                                                                                                                                                    euValLeuAspSerGluArgGlySerArgAsnGluValIleGlyGlnLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGACGTCCTTCAAGGGGCACAATTGATCCTTTCTACAATGAATCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LysThrHisValLysLysCysThrProAsnAlaValPheAsnGluLeuPh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTTGTGAAAATCCAGCTGGTGCATGGACTCAAACTTGTGAAAACCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            roTyrValLysValAsnLeuTyrHisAlaLysLysArgIleSerLysLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATTCGAGCCAAGCAACTTCTTCAGACAGATGTGAGCCAAGGTTCAGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTCTGTCACTGAATTATCTCCCAAGTGCTGGCAGACTGAATGTTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrValValVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rgGluIleIleLysArgAsnValArgLysSerSerGlyArgGlyGluLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAAGTTGACCTGGTCAAGGGCGGCGCACTGGTGGAAGGCGCTGATT.... 1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATAAGTTCTCCCGCCACTGTGTCATTGGGAAAGTTTCTGTGCCTTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AspargPheSerArgAspAspIleIleGlyGluValLeuIleProLeuSe 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTCCTGGAGGCCCAGAGGAGGACCCTGCTCCTGACCGTGGTGGATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGACCCAGAAGCCCGTGTTTGAGGAGCGCTACACCTTC...GAGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              {\tt gLysThrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyIleP}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCTGTCTCCTGCCAGACCAGAAGAACTCAAAGCAGACCGGGGTCAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1076
                                                                                                                                                                                                                                                                                                        1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  894
```

seq_documentation_block:
ID AAT79627 standard; cDNA to mRNA; 2043 BP
XX
AC AAT79627;
XX
DT 15-OCT-1997 (first entry)
XX
DT Uman Doc2-beta gene encodes colon cance.
XX
KW Doc2-beta; colon cancer; C2 region; neop.

Doc2-beta; colon cancer; C2 region; neoplasia; tumour; recombinant;

Human Doc2-beta gene encodes colon cancer protein.

seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA1997.DAT:AAT79627

cell line

```
alignment_block:
US-09-680-121-2 x AAT79627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: AAT79627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAT79627 is a cDNA sequence encoding a 412 amino acid sequence protein containing two C2 regions, Doc2-beta. The Doc2-beta protein was isolated from the human colon cancer cell line SW480. The protein and DNA encoding it are useful for the production of products for the diagnosis of colon cancer. A vector and transformed host cell are also claimed and the protein can be produced recombinantly.
                                                                                                                                                                                                                                                                       110
                             176
                                                           555
                                                                                      159
                                                                                                                    524
                                                                                                                                                   142
                                                                                                                                                                                 485
                                                                                                                                                                                                             126
                                                                                                                                                                                                                                           435
                                                                                                                                                                                                                                                                                                     391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2043 BP; 437 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New human colon cancer protein Doc2 beta -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P-PSDB; AAW25032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1997-367066/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-DEC-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-DEC-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-JUN-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JP09154586-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             diagnosis; human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SHIO ) SHIONOGI & CO
                                                                                                                                                                                                                                                                                                                                                                                        84 LysProAlaVal......ProLysAsnSerLeuHi
                                                                                                                                                                                                                                                                                                     CGAGGACGAGG.....GATGTGGACCAGCTCTTCGGAGCCTACGGCT
                                                                                                                                                                                                                                                                                                                                                               CGCCCGGCTGTGGCCGGTGCCGGCCGCCAGCCCCTCCGACGGCGCCCG
                                                                                                                                                                                                                                                                  euLysProGly...SerProSerAspLeuGluAsnAlaThrProLysLeu
                                                                                                                                                                                                                                                                                                                                sLeuAspLeuGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnL 110
AAGGCCAAGGGCCTGAAGCCAATGGACCACAATGGGCTG...GCAGACCC
                          GluAlaArgGlyLeuProAlaMetAspGluGlnSerMetThrSerAspPr 192
                                                                                      heSerLeuGluTyrAsnPheGluArgLysAlaPheValValAsnIleLys
                                                                                                                  .....GACGACTGCACTGCCCTGGGCACGCTGGACT
                                                                                                                                      rThrSerLeuThrSerGluGluLysGlnGluLysLeuGlyThrLeuPheP
                                                                                                                                                                              CCGCCGGAGGACGACGCCGACGGCTACGAGTCG......
                                                                                                                                                                                                          PheLeuGluGlyGluLysGluSerValSerProGluSerLeuLysSerSe
                                                                                                                                                                                                                                         TCAGCCTGCTATGACCAGGAGAACAACGCCCTCCACTGCACCATCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 6-8; 10pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 95JP-0320881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95JP-0320881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
161..1399
/*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                428.00
1.972
61.299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         677 C; 647 G; 282 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                         from: 1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length: 354
Gaps: 8
Percent Identity: 33.333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SW480;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ds
                                                                                                                                                                                                                                                                                                                                                                                                                         2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           has
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         two C2 regions
                                                                                                                                                                                                           142
                                                                                                                    554
651
                                                          604
                                                                                      175
```

Rabphilin-3A cDNA. 14-MAR-1995

(first entry)

Low molecular Rabphilin-3A;

weight; G protein; target protein; brain; nerve transmitter; ds.

rab3A p25

seq_documentation_block:

AAQ67062 standard;

CDNA

to mRNA;

seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA1994.DAT:AAQ67062

```
1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1052
                                                                                                                                                                                                                                                                1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         319
                                                                                                                                                                                                                      385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      224
                                                                                                                                                                                                                                                                                                                                                                                                                                    oTyrIleLysMetThrIleLeuPro.....GluLysLysHisLysValL
                                                                                                                                                                                                                                                                                                                                                  CGGAGTTTAATGAGGAGTTCTGTTACGAGATCAAGCATGGGGACCTGGCC
                                                                                                                                                                                                                                                                                                                                                                             laValPheAsnGluLeuPheValPheAspIleProCysGluGlyLeuGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACGTGTGCCCCTGAAGAAGCTGAAACCCAACCACCAAGACCTTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           eThrIleLeuSerPheAspArgPheSerArgAspAspIleIleGIyGluV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTACTACGGGATCACAGATGAAGACATGATCCGCAAGACCCTGCGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHisPh
TGGCACACGCTC
                                           TrpHisValLeu 422
                                                                                      TGAAGCACTGGTTTGACTGCCTGAAGAACAAGGACAAGCGCATCGAGCGC
                                                                                                                           lyGluHisTrpLysGluIleCysAspTyrProArgArgGlnIleAlaLys 418
                                                                                                                                                                           CGATTTCATTGGTGGTGTGGTTCTGGGCATCCACGCCAAGGGGGAGCGCC
                                                                                                                                                                                                      nGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThrGlyG
|::: ||||| :::||||||||
                                                                                                                                                                                                                                                                AAGAAGTCCCTGGAGGTCACCGTTTGGGATTACGACATTGGAAAATCCAA
                                                                                                                                                                                                                                                                                                      AspIleSerValGluPheLeuValLeuAspSerGluArgGlySerArgAs 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGCCTGCTGGCATCGTGCGGTGCGCCCACCTGGCCGCCATGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           snThrLeuThrValValValLeuLysAlaArgHisLeuProLysSerAsp 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAGGAGCGGGGCCGCATCCTCATCTCCCTCAAGTACAGCTCACAGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rSerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThrThrA 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCTGCCTGGAGAAGCAGCTGCCGGTGGACAAGACTGAAGACAAGTCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MetLeuMetAsnArgGlu.....IleIleLysArgAsnValArgLysSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alLeuIleProLeuSerGlyIleGluLeuSerGluGlyLys....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCTGTGTGTGACGAGGACAAATTCCGGCACAATGAGTTCATCGGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAACAAAAACTCTCCGTAACACTCTGAACCCCACATGGAACGAGACCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ysThrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTACGTCAAGCTGCACCTGCCGGGGGGGCCAGTAAGGCAAATAAGCTCA
  1363
                                                                                                                                                                                                                    402
                                                                                                                                                                                                                                                                1251
                                                                                                                                                                                                                                                                                                                                                                                                368
                                                                                                                                                                                                                                                                                                                                                                                                                                           1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           701
```

```
SXXCCCCCCXXXPTTTTHXXPXXPTXXPTXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-680-121-2 x AAQ67062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: AAQ67062 from: 1 to: 2135
                                                                                                                                                                                                                                                                                                                                                                                                                                     1101 CCGGGCTCCTATACCCAAGCCTCTGCGGCTGCTCCCCAGCCGGTGGTGGC 1150
                                                                                                                                            1301 GGGACTGAAGCCCATGGATTCGAATGGCTTG...GCCGATCCCTACGTTA 1347
                                                                                                                                                                                                                1251 CTCTATGACCAGGACAACAGCTCCCTGCACTGCACCATCATAAAGGCCAA 1300
                                                                                                                                                                                                                                                                                         1201 GCTACGATTCGGATGAAGCAACCACCCTGGGTGCCCTGGAGTTCAGCCTT 1250
                                                                                                                                                                                                                                                                                                                                                               1151 CTCGGCCCGTCAGCCCCCCACCCCTGAGGAGGACGAGGAGGAAGCTAACA 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Target protein of a low molecular G protein rabphilin-3A (RABBA) found in the brain and involved in release of nerve transmitter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (EISA ) EISAI CO LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-DEC-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-DEC-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            05-JUL-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JP06184199-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
1398 ACCCTGCGGAACACCAGAAACCCCCATCTGGAACGAAACTCTGGTCTACCA 1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 1; Page 6-9; 9pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        substance
                                                                                                                                                                                                                                                 162 GluTyrAsnPheGluArgLysAlaPheValValAsnIleLysGluAlaAr 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    112 ProGlySerProSerAspLeuGluAsnAlaThrProLysLeuPheLeuGl 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2135 BP; 552 A; 609 C; 630 G; 344 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This sequence encodes a low molecular weight 6 protein target protein, designated rab3A p25. Rabphlin-3A (Rab3A) is distributed specifically in brain tissue and participates in the release of nerve transmitter substance and is useful in the study of its
                                                                                                                                                                               178 gGlyLeuProAlaMetAspGluGlnSerMetThrSerAspProTyrIleL 195
                                                                                                                                                                                                                                                                                                                            145 euThrSerGluGluLysGlnGluLysLeuGlyThrLeuPhePheSerLeu 161
                                                                                                                                                                                                                                                                                                                                                                                                128 uGlyGluLysGluSerValSerProGluSerLeuLysSerSerThrSerL 145
                                210 ValLeuArgLysThrLeuAspProAlaPheAspGluThrPheThrPheTy 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1994-252836/31.
DB; AAR57421.
                                                                        AGCTGCACCTCCTGCCGGGAGCCAGCAAGTCCAACAAGCTTCGTACAAAA 1397
                                                                                                         ysMetThrIleLeuPro.....GluLysLysHisLysValLysThrArg 209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        92JP-0344055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92JP-0344055.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
21..2135
/*tag= a
/product= Rabphilin-3A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   408.00
1.934
62.611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      eaps: 4
Percent Identity: 29.377
```

```
seq_documentation_block:
ID AAZ00321 standard; cDNA to mRNA; 2255 BP.
XX AC AAZ00321;
XX 22-OCT-1999 (first entry)
XX Mouse Doc2alpha gene sequence.
XX Transgenic mouse; Doc2alpha; nervous disease
XX Mus sp.
FH Key Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA1999.DAT:AAZ00321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1498 GTGATGAGGACAAATTCGGCCATAATGAGTTTATTGGTGAGACCAGATTC 1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1448 TGGCATCACAGACGAGGACATGCAAAGGAAGACCCTCAGAATCTCTGTCT 1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1845 GGAAAGAAAGCCAAACACAAGACTCAAATTAAGAAGAAAACCTTGAATCC 1894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1795 CCAATGGCTACTCAGATCCATTTGTCAAGCTCTGGCTGAAACCAGACATG 1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1745 AGGCCTCATCGTGGGCATCATACGCTGCGTGCACCTGGCGCCCATGGATG 1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1548 TCCCTCAAGAAACTGAAGCCCCAATCAGAGGAAGAACTTCAACATCTGTCT 1597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1895 TGAATTTAATGAGGAATTTTTCTATGACATCAAACACAGTGACCTGGCGA 1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2095 GGCACCAGCTA 2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2045 AAAACACTGGTACGAGTGTCTGAAAAAACAAGGACAAGAAGATCGAACGCT 2094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1995 GATTACATTGGAGGCTGCCAGCTGGGGATCTCGGCCAAGGGAGAGCGCTT 2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1945 AGAAGTCACTGGACATCTCAGTCTGGGACTATGACATCGGCAAGTCCAAT 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     352 aValPheAsnGluLeuPheValPheAspIleProCysGluGlyLeuGluA 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 336 LysArgIleSerLysLysLysThrHisValLysLysCysThrProAsnAl 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319 alserGlyLeuSerAspProTyrValLysValAsnLeuTyrHisAlaLys 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302 nThrLeuThrValValValLeuLysAlaArgHisLeuProLysSerAspV 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 286 SerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThrThrAs 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         269 lyLysMetLeuMetAsnArgGluIleIleLysArgAsnValArgLysSer 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          243 euSerPheAspArgPheSerArgAspAspIleIleGlyGluValLeuIle 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  226 rGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleL 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402 yGluHisTrpLysGluIleCysAspTyrProArgArgGlnIleAlaLysT 419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       386 GluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThrGlyGl 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   419 rpHisValLeu 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCATGGCCCTCTATGAGGAGGAGCAGGTGGAACGT...ATTGGTGACATA 1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAGCGGGTGATCCCGATGAAGCGTGCCGGAACCACTGGGTCAGCCCGAG 1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              spIleSerValGluPheLeuValLeuAspSerGluArgGlySerArgAsn 385
```

Transgenic mouse; Doc2alpha; nervous disease; endocrine system; ds

```
alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-680-121-2 x AAZ00321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
                                                                                                                                                                                                                                                                                                               620
   864
                                226
                                                               814
                                                                                          210
                                                                                                                         764
                                                                                                                                                       195
                                                                                                                                                                                      717
                                                                                                                                                                                                                     178
                                                                                                                                                                                                                                                    667
                                                                                                                                                                                                                                                                                  162
                                                                                                                                                                                                                                                                                                                                                145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2255 BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention provides a transgenic mouse in which the sequence encoding the Doc2alpha protein is deleted. The mouse is useful as an experimental animal for the elucidation of causes of diseases in nervous and endocrine systems and the development of treating methods. The present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New transgenic mouse in which Doc2alpha is deleted - used diagnosis of nervous system and endocrine disorders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; AAY27275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1999-496580/42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            07-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-JAN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JP11196709-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      112 ProGlySerProSerAspLeuGluAsnAlaThrProLysLeuPheLeuGl 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 8-10; 13pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SHIO ) SHIONOGI & CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        represents the mouse Doc2alpha gene sequence.
                                                                                                                                                                                                      gGlyLeuProAlaMetAspGluGlnSerMetThrSerAspProTyrIleL 195
:||||||
                             rGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleL 243
                                                                                                                                          ysMetThrIleLeuProGlu.....LysLysHisLysValLysThrArg
                                                                                                                                                                                      GGGCCTCAAGCCCATGGATTTCAATGGCCTG...GCTGACCCCTATGTAA
                                                                                                                                                                                                                                                    CTCTATGATCAGGCTTCCTGCATGCTGCACTGTAGAATCCTCAGGGCCAA
                                                                                                                                                                                                                                                                               GluTyrAsnPheGluArgLysAlaPheValValAsnIleLysGluAlaAr 178
                                                                                                                                                                                                                                                                                                               ACGACTCGGATGAT...ACCACCGCCCTGGGCACACTGGAATTTGACCTT
                                                                                                                                                                                                                                                                                                                                 uGlyGluLysGluSerValSerProGluSerLeuLysSerSerThrSerL 145
                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGCTCATCTGGCCCCTCTGGCCTCTGGCCCCCCTGCGGCTCTCCTT...
CGGGATCACGGATGACATCACCCACAAGGTGCTCAGGATCTCTGTCT
                                                             ACACAGAGGAACACACTGAACCCTGTGTGGAATGAGGAGCTGACGTACAG
                                                                                          ValLeuArgLysThrLeuAspProAlaPheAspGluThrPheThrPheTy
                                                                                                                         AGCTTCACCTCCTGCCAGGAGCCTGCAAGGCCAATAAGCTAAAAACCAAG
                                                                                                                                                                                                                                                                                                                                                                           .....GGGGCCACTACACCCGACGATGGAGCTGAGGTAGACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to: AAZ00321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98JP-0001925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98JP-0001925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= a
/product=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                393.50
1.977
58.529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  361..1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              517 A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            639 C; 641 G; 458 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Doc2alpha protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ф:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31.176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               340
                                                                                                                                                                                                                                                                                                                                                                             619
                                                                                                                                                                                      763
                                                                                                                                                                                                                                                  716
                                                                                                                                                                                                                                                                                                               666
                                                                                                                                                                                                                                                                                                                                                                                                                                         579
                                                                                                                         813
                                                                                                                                                      209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       endocrine
```

```
seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                 seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA1996.DAT:AAT40760
                                                                                                                                                                                                                                                                                                                                                                          1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           278
                                                                                                                                                                                                                                                                                                                                                                                                          416 leAlaLysTrpHisValLeu 422
                                                                                               cerebral nervous
                                                                                                                 Doc2; brain-specific; neurotransmitter; diagnostic;
                                                                                                                                                     Doc2 (brain-specific
                                                                                                                                                                                                                                                                         AAT40760 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              243
                                                            Homo
                                                                                                                                                                                                26-NOV-1996
                                                                                                                                                                                                                                    AAT40760;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SerArgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATGGATGTTAACGGCTACTCTGACCCTTATGTGAAGACGTACTTGAGA 1263
                                                                                                                                                                                                                                                                                                                                                                          TGGAGCGCTGGCATACTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGGCCCAGAAACACTGGAATGACTGTCTACATCAGCCGGACACAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         yThrGlyGlyGluHisTrpLysGluIleCysAspTyrProArgArgGlnI 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATCCAATGACTTCATAGGTGGTGTGTCTCTGGGGCCCAGGAGCCCGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCTGGCCACTAAGACCCTGGAGGTCACAGTCTGGGACTACGACATTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   lyLeuGluAspIleSerValGluPheLeuValLeuAspSerGluArgGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTAAATCCGGAATTTAATGAGGAATTCTTCTATGAGATTGAACTCTCCA 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rProAsnAlaValPheAsnGluLeuPheValPheAspIleProCysGluG 366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGATGTGGATAAGAAATCCAAGCACAAAACATGTGTAAAAGAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HisAlaLysLysArgIleSerLysLysLysThrHisValLysLysCysTh 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ysSerAspValSerGlyLeuSerAspProTyrValLysValAsnLeuTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGGCGGCATGGGCTGCTGGGGCATTGTTCGCTGTGCGCACCTGGCTG 121:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 rThrThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuProL 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGCTGCTGGAAGAGCGCGGCCCGATCCTGCTGAGCCTCAGCTACAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ......ArgGlyGluLeuLeuIleSerLeuCysTyrGlnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAGCGCCAGGTCCCGCTTCCTTCACCCTCTTCAATGTCTGCGGCGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tAsnArgGluIle.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCCTCCGCCGCCTCAAGCCTTCACAGAAGAAGCATTTTAACATCTGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ProLeuSerGlyIleGluLeuSerGluGlyLys.....MetLeuMe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGATGAGGACAAGCTGAGCCACAATGAATTCATTGGGGAGATCCGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       euSerPheAspArgPheSerArgAspAspIleIleGlyGluValLeuIle
                                                          sapiens
                                                                                                                                                                                            (first entry)
Location/Qualifiers
125..1327
                                                                                             system;
                                                                                                                                                                                                                                                                           CDNA
                                                                                                                                                     protein)
                                                                                                                                                                                                                                                                           to mRNA; 1718
                                                                                                                                                                                                                                                                                                                                                                          1533
                                                                                                 ds
                                                                                                                                                     encoding
                                                                                                                                                                                                                                                                           ВP
                                                                                                                                                     sequence
                                                                                                                   therapeutic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              259
```

/product= /*tag=

Doc2

```
alignment_block:
US-09-680-121-2 x AAT40760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_scores:
    Quality:
    Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SO CCCCCXXX FFXX PRX FFXX PRX FFX PRX 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: AAT40760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence encodes a brain-specific protein, Doc2. It is useful in the elucidation of neurotransmitter releasing mechanisms. gene and anti-Doc2 antibodies are useful for the development of diagnostic and therapeutics for the cerebral nervous system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    576 CACTGAATCCCGTGTGGAATGAGGACCTGACTTACAGCGGGATCACAGAT 625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199 uProGlu.....LysLysHisLysValLysThrArgValLeuArgLysT 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             183 MetAspGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLe 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166 luArgLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAla 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       149 uLysGlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133 SerValSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGl 149
                                                                                                                                                                                                                                                                                                                                                                                                                      231 ThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerPheAspAr 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              214 hrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyIleProTyr 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1718 BP; 366 A; 539 C; 504 G; 309 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Page 10-12; 15pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA encoding brain-specific protein, Doc2 - is useful in elucidation of neuro:transmitter releasing mechanisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; AAW01114.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1996-357242/36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SHIO ) SHIONOGI & CO LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-DEC-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                02-JUL-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JP08168385-A
                                                                                    leGluLeuSerGluGlyLys.....MetLeuMetAsnArgGluIle 277
                                                                                                                                                                                                                                                  gPheSerArgAspAspIleIleGlyGluValLeuIleProLeuSerGlyI
                                                                                                                                                                        GCTGAGTCACAATGAGTTTATTGGGGAGATCCGCGTGCCCCTCCGCCGCC
                                                                                                                                                                                                                                                                                                                                                 GACGACATCACGCACAAGGTGCTCAGGATCGCCGTCTGTGATGAGGAÇAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTGGAGCCTGTAAGGCCAATAAGCTAAAAACGAAGACTCAGAGGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGGATTTCAATGGCCTC...GCCGACCCCTACGTCAAGCTGCACTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCTCCTGCACTCTGCACGTATGCATCCTCAGGGCCAAGGGCCTCAAGCCC
TCAAGCCTTCGCAGAAGAAGCATTTTAACATCTGCCTCGAGCGCCAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T...GCCACCGCCTAGGCAAGCTGGAGTTTGACCTTCTCTACGACCGGG 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCCACCACGCCTGAGGATGGTGCGGAGGTGGACAGCTATGACTCGGATGA 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94JP-0257205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94JP-0320775.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          384.50
2.013
59.875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from: 1 to: 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length: 319
Gaps: 6
Percent Identity: 31.975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           525
    775
                                                                                                                                                                        725
                                                                                                                                                                                                                                                       264
                                                                                                                                                                                                                                                                                                                                            675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               478
```

```
PAXXFT THE FIRST CONTRACTOR OF THE FIRST CONTRACTOR OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
ID AAV72944 standard; cDNA to mRNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA1999.DAT:AAV72944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1276 CACCCTG 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1226 CACTGGAGTGACTGCCTGCAGCAGCGGGACGCAGCCCTGGAGCGCTGGCA 1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Munc13; Doc2-alpha; interacting domain; screening; agonist; antagonist; calcium ion dependent secretion inhibitor; neurotransmitter; hormone; fusion protein; nervous disease; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              404 HisTrpLysGluIleCysAspTyrProArgArgGlnIleAlaLysTrpH1 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  387 alIleGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThrGlyGlyGlu 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          304 LeuThrValValValLeuLysAlaArgHisLeuProLysSerAspValSe 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      876 AGCGTGGCCGCATCCTGCTGAGTCTCAGCTACAGCTCGCGGGGGGCGCCGGGGA 925
                                                                                                                                                                                                                                                                     02-DEC-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human Doc2-alpha encoding cDNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-MAR-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420 sValLeu 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              288 ..ArgGlyGluLeuLleSerLeuCysTyrGlnSerThrThrAsnThr 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         826
                                                                                                                                                                                                                                                                                                                                                       JP10313866-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        776 CCGCTGGCGTCCCCCTCTTCCATGTCAGCGGCGCTGAGGGGCATCTCCTG 825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACCCTGGAAGTCACCGTCTGGGACTATGACATTGGCAAATCCAATGACT 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rGlyLeuSerAspProTyrValLysValAsnLeuTyrHisAlaLysLysA 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ....IleLysArgAsnValArgLysSerSerGly.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCATTGGTGGCGTGTCCCTGGGGCCAGGTGCCCGAGGCGAGGCTCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           eSerValGluPheLeuValLeuAspSerGluArgGlySerArgAsnGluV 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTAACGAGGAGTTTTTCTACGAGATAGAGCTCTCCACTCTGGCCACCAA 1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PheAsnGluLeuPheValPheAspIleProCysGluGlyLeuGluAspIl 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAAATCCAAGCATAAGACGTGTGTGAAGAAGAAGACTCTCAACCCAGAA 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rgIleSerLysLysLysThrHisValLysLysCysThrProAsnAlaVal 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGTTACTCGGACCCCTACGTCAAGACGTACCTGAGGCCCGATGTGGACA 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCTGGTAGGCATCTTGCGCTGCGCCCATCTGGCTGCATGGACGTCAA 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1225
```

15-MAY-1997;

97JP-0126118 97JP-0126118

15-MAY-1997;

(SHIO) SHIONOGI & CO LTD

```
alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-680-121-2 x AAV72944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         neurotransmitter or hormone; (4) a fusion protein between Doc2-alpha or its homologue and a carrier protein; (5) a fusion protein between Munc13 or its homologue and a carrier protein; (6) a polypeptide containing amino acids 13-37 of the sequence of Doc2-alpha, which binds with Munc13 and comprises at most 90 amino acids; and (7) a polypeptide containing amino acids 851-1461 of the sequence of Munc13, which binds with Doc2-alpha and comprises at most 904 amino acids. The agonist or antagonist can be used to treat diseases of the nervous system. The present
                                                        247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 149
                                                                                                                                                                                                                                                       576
                                                                                                                                                                                                                                                                                                               214
                                                                                                                                                                                                                                                                                                                                                                                 526
                                                                                                                                                                                                                                                                                                                                                                                                                                               199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1718 BP; 366 A; 539 C; 504 G;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                homologue optionally in the presence of a test substance and selecting the substances which increase or decrease binding. Also described are: (1) an agonist or antagonist of the binding between Doc2-alpha and Munc13 selected by the above method; (2) a vector expressing Doc2-alpha or its homologue used for inhibiting Ca ion-dependent secretion of a neurotransmitter or hormone; (3) a vector expressing Munc13 or its homologue used for inhibiting Ca ion-dependent secretion of a neurotransmitter or hormone; (3) a vector expressing Munc13 or its homologue used for inhibiting Ca ion-dependent secretion of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention describes a method of screening for antagonists of the binding between Doc2-alpha and Munc13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 15; Page 16-20; 33pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Screening for agonists or antagonists of binding between Doc2-alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 133 SerValSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence encodes human Doc2-alpha.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          comprises reacting Doc2-alpha or its homologue with Muncl3 or its
                                MetAspGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Munc13 - used to treat diseases of the nervous system
GCTGAGTCACAATGAGTTTATTGGGGAGATCCGCGTGCCCCTCCGCCGCC
                                                                                                                      GACGACATCACGCACAAGGTGCTCAGGATCGCCGTCTGTGATGAGGACAA 675
                                                                                                                                                                                                                                                                                                        hrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyIleProTyr 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                luArgLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAla 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T...GCCACCGCCCTAGGCAAGCTGGAGTTTGACCTTCTCTACGACCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             uLysGlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCACCACGCCTGAGGATGGTGCGGAGGTGGACAGCTATGACTCGGATGA
                                                                                                                                                                                     ThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerPheAspAr
                                                                                                                                                                                                                                                CACTGAATCCCGTGTGGAATGAGGACCTGACTTACAGCGGGATCACAGAT 625
                                                                                                                                                                                                                                                                                                                                                                             GCCTGGAGCCTGTAAGGCCAATAAGCTAAAAACGAAGACTCAGAGGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                         uProGlu.....LysLysHisLysValLysThrArgValLeuArgLysT 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGATTTCAATGGCCTC...GCCGACCCCTACGTCAAGCTGCACTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTCCTGCACTCTGCACGTATGCATCCTCAGGGCCCAAGGGCCTCAAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1999-074148/07
DB; AAW83429.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         to: AAV72944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 384.50
2.013
59.875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         to: 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
31.975
                                                                                                                                                                                     247
                                                                                                                                                                                                                                                                                                                                                                             575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               428
                                                           264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    agonists or
The method
```

```
seq_documentation_block:
ID AAI10603 standard.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: /SIDS8/gcgdata/geneseq/geneseqn/NA2001.DAT:AAI10603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1276 CACCCTG 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420 sValLeu 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      976
04-FEB-2000;
26-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   304
                                                             30-JAN-2001; 2001WO-US00670
                                                                                                                                                                                                                                        Probe; human; microarray; gene expression; cervical epithelial cell; cervical cancer; ss.
                                                                                                                                                                                                                                                                                                        Probe #536 for gene expression analysis in human cervical cell sample
                                                                                                                                                                                                                                                                                                                                                                                              AAI10603;
                                                                                                                                                                                                                                                                                                                                                                                                                                          AAI10603 standard; DNA;
                                                                                                                                                    WO200157278-A2
                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                               12-OCT-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PheAsnGluLeuPheValPheAspIleProCysGluGlyLeuGluAspIl 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACTGGAGTGACTGCCTGCAGCAGCGGGACGCAGCCCTGGAGCGCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HisTrpLysGluIleCysAspTyrProArgArgGlnIleAlaLysTrpHi 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCATTGGTGGCGTGTCCCTGGGGCCAGGTGCCCGAGGCGAGGCTCGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alileGlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThrGlyGlyGlu 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACCCTGGAAGTCACCGTCTGGGACTATGACATTGGCAAATCCAATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             eSerValGluPheLeuValLeuAspSerGluArgGlySerArgAsnGluV 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTAACGAGGAGTTTTTCTACGAGATAGAGCTCTCCACTCTGGCCACCAA 1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAAATCCAAGCATAAGACGTGTGTGAAGAAGAAGACTCTCAACCCAGAA 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rgIleSerLysLysLysThrHisValLysLysCysThrProAsnAlaVal 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGTTACTCGGACCCCTACGTCAAGACGTACCTGAGGCCCGATGTGGACA 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rGlyLeuSerAspProTyrValLysValAsnLeuTyrHisAlaLysLysA 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGCTGGTAGGCATCTTGCGCTGCGCCCATCTGGCTGCCATGGACGTCAA 975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LeuThrValValValLeuLysAlaArgHisLeuProLysSerAspValSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCGTGGCCGCATCCTGCTGAGTCTCAGCTACAGCTCGCGGGGCGCCGGGGA 925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..ArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThrThrAsnThr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTATCTGAAGGACTTGGAGCAGGCGGAGCAGGGGCAGGGGCTGCTGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ....IleLysArgAsnValArgLysSerSerGly.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGCTGGCGTCCCCCTCTTCCATGTCAGCGGCGCTGAGGGGCATCTCCTG 825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCAAGCCTTCGCAGAAGAAGCATTTTAACATCTGCCTCGAGCGCCAAGTC 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     leGluLeuSerGluGlyLys.....MetLeuMetAsnArgGluIle
2000US-0180312
2000US-0207456
                                                                                                                                                                                                                                                                                                                                                                                                                                          383
                                                                                                                                                                                                                                                                                                                                                                                                                                          ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           277
```

```
alignment_scores:
Quality: 370.50
Ratio: 4.464
Percent Similarity: 94.318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-680-121-2 x AAI10603/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Align seg 1/1 to reverse of: AAI10603 from: 1 to: 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present invention relates to human single exon nucleic acid probes (SENP). The present sequence is one such probe. The SENPs are derived from human HeLa cells. The SENPs can be used to produce a single exon microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer.

Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIFO at ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      131 CAAGAGAAAT 122
                                                                         278 eLysArgAsn 281
                                                                                                                                                            262 SerGlyTleGluLeuSerGluGlyLysMetLeuMetAsnArgGluIleII 278
261 JIIIIIIIIIIIII 278
262 JERGLUME 278
263 JERGLUME 278
263 JERGLUME 278
263 JERGLUME 278
264 JERGLUME 278
265 JERGL
                                                                                                                                                                                                                                                                                                                                              231
                                                                                                                                                                                                                                                                                                                                                                                                  245 eAspArgPheSerArg.AspAspIleIleGlyGluValLeuIleProLeu 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               197 ThrileLeubroGluLyslysHstlysValLysThrArgValLeuArgly 213
381 ACGATCCTCCCAGAGAAGAAGCATTAAAGTGAAAACTAGAGTGCTGAGAAA 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 383 BP; 125 A; 71 C; 58 G; 123 T; 6 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 25; SEQ ID No 536; 487pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human cervical epithelial cells - \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-488901/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Penn SG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-JUN-2000; 2000US-0608408.

03-AUG-2000; 2000US-053366.

21-SEP-2000; 2000US-0234687.

27-SEP-2000; 2000US-0236359.

04-OCT-2000; 2000GB-0024263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MOLE-) MOLECULAR DYNAMICS INC.
                                                                                                                                                                                                                                                                                                                                              TGACAGGTTTTCAAGANGATGATATCATTGGGGAAGTTCTAATTCCTCTC 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hanzel DK, Chen W, Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length: 88
Gaps: 3
Percent Identity: 90.909
```

```
gb_est2:H35435
gb_est2:Bg66842
gb_est2:BF472172
gb_est2:BG084832
gb_est2:R50824832
gb_est1:AV663576
gb_est1:AL520824
gb_est1:AA447762
gb_est1:AA45762
gb_est1:AL516750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gb_est1:AW914162
gb_est1:AW914163
gb_est1:AU035592
gb_est1:AA081755
gb_est2:BF563293
gb_est2:BF044050
gb_est2:BF043853
gb_est2:BF043853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database sequences: 11351937
Database length: 1077921985
Search time (sec): 1537.320000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query length: 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Search information block:
Query: US-09-680-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est1:AU050945
gb_est2:BG666223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                          gb_est1:AV728050
                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_est2:BI112436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est1:AW1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_est1:AW160503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        yb_est1:AW367632
yb_est1:AW367662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         jb_est2:BF402440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gb_est2:BG665092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -MODEL-frame+_p2n.model -DEV=xlp
-Q=/cgn2_1/USPTO_spco1/US95680121/runat_12122001_105511_22723/app_query.fasta_1.488
-DB=EST -OFMT=fastap -SUFFIX=p2n.rst -GAPOP=12.000 -GAPEXT=4.000
-MINMATCH=0.100 -LOOPCL=0.000 -LOOPEXT=0.000 -GGAPOP=4.500
-QGAPEXT=0.050 -XGAPOP=10.000 -XGAPEXT=0.000 -FGAPOP=6.000
-FGAPEXT=7.000 -YGAPOP=10.000 -XGAPEXT=0.500 -DELOP=6.000
-DELEXT=7.000 -YGAPOP=10.000 -YGAPEXT=0.500 -DELOP=6.000
-LIST=45 -DOCALIGN=200 -THR_SCORE=pct -THR_MAX=100 -THR_MIN=0
-ALIGN=15 -MODE=LOCAL -OUTFMT=pfs -NORM=ext -MINLEN=0
-MAXLEN=2000000000 -USER=US09680121_eCGN1_1_0 -NCPU=6 -ICPU=3
-LONGLOG -NO_XLPXY -WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-680-121-2 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Results were produced by the GenCore software, version Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12, 2001 11:59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Strd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Orig
508.50
469.00
467.00
455.00
455.00
452.00
451.00
452.00
451.00
451.00
451.00
451.00
451.00
451.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                    592.00
590.00
586.50
586.00
557.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        668.00
668.00
665.00
665.00
639.50
632.50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          746.00
711.50
700.00
                                                                                                                                                                                                                                                                                                                                                                                                     539.
                                                                                                                                                                                                                                                                                                                                                                                                                          549
                                                                                                                                                                                                                                                                                                                                                                                                1271 28
1270 17
1220 17
1221 00
1211 00
1211 00
1204 48
1196 93
1117 98
1117 98
1117 98
1117 98
1117 98
1117 98
1117 98
1117 98
1117 32
1133 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2Score
2047.99
2023.08
1952.71
1622.52
1532.90
1431.16
1359.37
1339.46
1314.56
11021.62
11006.63
970.63
990.63
892.06
894.32
884.80
868.27
855.960
855.960
855.960
855.960
855.960
855.960
855.960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1278.63
1278.63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        out_format :
                                                                                                                                                                                            2.2e-48
9.7e-48
6.7e-47
6.7e-45
1.6e-40
1.2e-40
4.0e-40
3.4e-39
1.0e-38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.5e-70
1.5e-66
1.9e-65
4.7e-64
2.8e-64
4.7e-62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ESCOTE 1
6.6e-105
1.6e-103
                       1.6e-38
6.4e-39
1.4e-38
5.7e-36
2.8e-36
1.0e-35
                                                                                                                                                                                                                                                                                                                                                                                                                     1.2e-61
1.3e-61
2.4e-59
2.4e-59
2.1e-57
2.1e-53
2.1e-53
2.1e-53
2.1e-53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .3e-99
.3e-81
.2e-76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Len
  \begin{array}{c} 656 \\ 565 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\ 656 \\
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BEO44050 BP250004A20C6 Soares I BF044050 BP250014A20C6 Soares I BF0440853 BP250014A20C6 Soares I BF0440853 BP250014A20C6 Soares I BF0440853 BP250014A20C6 Soares I BF0667100 DRACLDO3 Rat DRG Libral AU050945 AU050945 Sugano mouse BG666222 DRAAAFE06 Rat DRC Libral BI112436 602900354F1 NCL CGAP AV728050 AV728050 HTC Homo sapi H35435 EST105586 Rat DC-12 cell EG669842 DRNAAKH10 Rat DRG Libral H35435 EST105586 F3 NIA MOUSE I ACCEPTATE AUTOMAKH10 RAT DRG LIBRAT BF472172 UI-M-BH3-awx-d-11-0-UI BG084832 H3106E08-5 NIA MOUSE I ACCEPTATE AV63576 AV63576 BOS TEAURUS DA AU520824 AU520824 LTI_NFL004_MI AA445762 VC63D502-SI KNOWLES SOI AV727109 AV727109 HTC HOMO SAI AV727109 AV727109 HTC HOMO SAI AV727109 AV727109 AV727109 HTC HOMO SAI BB254363 BB254363 RIKEN full-LE BB254363 BB254363 RIKEN full-LE BG667224 DRABBAD8 RAT DRG LIBRAT BEO68724 BR BB247248 UI-M-BH3-awx-d-11-0-UI BEO687244 BUI-M-BH3-awx-d-11-0-UI BEO68724 BR BB247248 UI-M-BH3-awx-d-11-0-UI BR BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AW337632 MR0-HT0165-121199-003
AW367662 MR0-HT0165-191199-003
AW914162 EST345466 Normalized r
AW914163 EST345467 Normalized r
AW914163 EST345467 Normalized r
AW91453592 AU035592 Sugano mouse
AA081755 zn22d07.r1 Stratagene
BE563293 UI-R_B01-aji-e-05-0-UI
                         BF918296 SWOv3MCAM54E08SK Oncho
AI322332 mc27e09.yl Soares mous
  mc27e09.yl Soares mou 602964537F1 NCI_CGAP_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb_gss:CNS036RD
gb_est1:A1878251
gb_gss:CNS0317z
                                                 alignment_block:
                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_name: gb_est1:AW160503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_est1:AW174543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                         US-09-680-121-2 x
                                                                                                  Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST
                                                                                                                                                Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tel: 314 286 1800
Fax: 314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AW16050:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Wilson RK
                                                                                                                         Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 656)
                                                                                                                                                                                                                                                                         213
                            AW160503
                                                                                                                                                                                                                                                                         മ
                                                                                               1065.00
5.071
98.131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                418
416
408
406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .00
                                                                                               Percent Identity: 97.196
```

```
Hillier,L., Allen,M., Bowles,L., Dubuque,T., Geisel,G., Jost,S., Krizman,D., Kucaba,T., Lacy,M., Le,N., Lennon,G., Marra,M., Martin,J., Moore,B., Schellenberg,K., Steptoe,M., Tan,F., Theising,B., White,Y., Wylie,T., Waterston,R. and Wilson,R. WashU-NCI human EST Project
Unpublished (1997)
Other_ESTs: au73c12.xl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AW160503 656 bp mRNA EST 09-NOV-1999 au73c12.yl Schneider fetal brain 00004 Homo sapiens cDNA clone IMAGE:2781910 5' similar to SW:SYT4_RAT P50232 SYNAPTOTAGMIN IV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IMAGE Consortium (info@image.llnl.gov) for
Seq primer: -40RP from Gibco
Seq quality sequence stop: 427.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Email: estiwatson.wustl.edu
Email: estiwatson.wustl.edu
This clone is available royalty-free through LINL; contact the
This clone is available royalty-free through LINL; contact the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Washington University School of Medicine 4444 Forest Park Parkway, Box 8501, St. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AW160503.1 GI:6299536
/note-"Organ: brain; Vector: pBluescript SK (Stratagene);
Site_1: Sstt; Site_2: XhoI; Double-stranded cDNA was
prepared from human fetal brain tissue. 5' and 3'
adaptors were used in cloning as follows: 5' adaptor
                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="frontal lobe"
/dev_stage="5 months post-conception"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:2781910"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="Schneider fetal brain 00004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 794.45
788.61
773.04
764.82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4.4e-35
9.2e-35
6.8e-34
1.9e-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Louis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AW174543 fj05d11.yl Zebrafis
AL230386 Tetraodon nigroviri
AI878251 fc52d10.yl Zebrafis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AL245240 Tetraodon nigrovir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63108
```

Align seg 1/1 to: AW160503 from: 1

to: 656

```
ACCESSION
VERSION
KEYWORDS
                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_documentation_block:
LOCUS ลพาธรรกจ
                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184 spGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuPro 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      151 GlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluAr 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  134 alSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               365 TCTGGAGAATGCAACCCCGAAGCTCTTTTTAGAAGGGGAAAAAAGAGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GluLysLysHisLysValLysThrArgValLeuArgLysThr 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MetAlaProTleThrThrSerArgGluGluPheAsgGluIleProThrVa 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGAGCAGTCGATGACCTCTGACCCATATATCAAAATGACGATCCTCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetA 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTGGGGATCTTCAGTGCATTTGGCCTGGTCTTCACAGTCTCTCTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGAGAAGCTGGGAACTCTCTTCTTCTTCTTACAATACAACTTCTAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lValGlyIlePheSerAlaPheGlyLeuValPheThrValSerLeuPheA 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGAAGAAGCATATAGTGAANACTAGAGTGCTGAGATCAACC 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_est1:AW163709
                                                                                                                                                                                                                                                                                                                                                                                                                              AW163709 635 bp mRNA EST 09-NOV-1999 au97d06.yl Schneider fetal brain 00004 Homo sapiens cDNA clone IMAGE:2784203 5' similar to SW:SYT4_RAT P50232 SYNAPTOTAGMIN IV. ;,
Eukaryota: Metazoa: Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 635)

1 (this to 635)

2 (this to 63
                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                           AW163709.1 GI:6302742
                                                                                                                                                                                                                                                                                                                                                                         aW163709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                      215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                               67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   65
   ysProAlaValProLysAsnSerLeuHisLeuAspLeuGluLysArgAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206
```

```
Align seg 1/1 to: AW163709 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-680-121-2 x AW163709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                             165 TACAAGTTTGTGCATGTGCTTAAGGGAGTTGATATNTACCCTGAAAACCT
                                                                                                                           51 TyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLe
                                                                                                                                                                                                                                                                                                                           17 lValGlyI1ePheSerAlaPheGlyLeuValPheThrValSerLeuPheA
                                                                                                                                                                                                                                                                                                                                                                                            uAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL
AAATAGCAAAAAGAAGTTTGGAGCAGATGATAAAAATGAAGTAAAGAATA 264
                                                                                                                                                                                                                                                                                                    Quality: 1052.00
Ratio: 5.132
nilarity: 99.034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Seq primer: -40RP from Gibco
High quality sequence stop: 434.
Location/Qualifiers
1. 635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WashU-NCI human EST Project
Unpublished (1997)
Other_ESTS: au97d06.x1
Contact: Wilson RK
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and 3' adaptor sequence:

5'-GAGAGAGACTCGACTTTTTTTTTTTTTTTTT-3'. The library was size-selected for >0.5 kb inserts and has an average insert size estimated at 1.2 kb. This library was constructed using the CAP-trapper method for full-length enrichment and has not undergone amplification. Library was constructed by Dr. Claudio Schneider (LNCIB-Area Science Park, Trieste, Italy)."

Science Park, Trieste, Italy). "

143 c 134 g 151 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="Organ: brain; Vector: pBluescript SK (Stratagene);
Site_1: SstI; Site_2: XhoI; Double-stranded cDNA was
prepared from human fetal brain tissue. 5' and 3'
adaptors were used in cloning as follows: 5' adaptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="frontal lobe"
/dev_stage="5 months post-conception"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:2784203"
/clone_lib="Schneider fetal brain 00004"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length: 207
Gaps: 0
Percent Identity: 98.551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; o
                                                                                                 214
                                                84
                                                                                                                                               67
                                                                                                                                                                                                                                                                                                    114
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_est2:BG665092
                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GluLysLysHisLysValLys 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluAr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCCCCTGAGAGTTTAAAGTCCAGCACTTCCCTTACTTCAGAAGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGAGAAGCTGGGAACTCTCTTCTTCTTCTTAGAATACAACTTCGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alSerProGluSerLeuLysSerSerThrSerLeuThrSerGluGluLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            spGluGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gLysalaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGAAGAAGCCTAAAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAGCAGTCGATCCTCTGACCCATATATCAAAATGACGATCCTCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAGCATTTGTGGTCAATATCAAGGAAGCCCGTGGCTTGCCAGCCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCCAGCTGTGCCAAAGAATTCATTGCATCTGGATCTTGAAAAGAGAGAT
                                                                                                                                                                                                                                                                                                                                                                  Xiao,H.S., Han,
, Guo,C., Yan,Q., J
                                                                                         Seq prime POLYA=No.
                                                                                                                                                                                                                                        Contact: Zhang Xu
Laboratory of Sensory System
Institute of Neuroscience
320 Yue Yang Road, Shanghai 200031, P.R.China
Tel: 86-21-64748700-121
Fax: 86-21-64713446
                                                                                                                                                                                                                                                                                                                                Distinct gene expression profiles of rat induced by peripheral nerve axotomy Unpublished (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
BG665092
BG665092.1 GI:13887014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DRABYC01 Rat DRG Library Rattus norvegicus
                                                                                                                                                            This clone is also available at Chinese National Human Genome Center at Shanghai, 351 Guo Shoujing Road, Zhangjiang Hi-Tech Pudong New Area, P.R.China. Please contact with Zhang Xu (xu zhang@ion.ac.cn) or Han Zeguang (hanzg@chgc.sh.cn)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EST
                                                                                                                      FORWARD: T3
BACKWARD: T7
                                                                                                                                                  (xu.zhang@ion.ac.cn)
PCR PRimers
                                                                                                                                                                                                                          Email: xu.zhang@ion.ac.cn
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                            Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 739)
                                                                                                     primer: T3
/organism="Rattus norvegicus"
/strain="sprague-Dawley"
/db_xref="taxon:10116"
/clone="DRABYC01"
                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                           Han,Z.G., Zhang,F.X., Huang,Q.H., L
Yan,Q., Jin,S.X., Zhu,Z.D., Xu,X.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ďď
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                 dorsal root
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDNA
                                                                                                                                                                                                                                                                                                                                                                                             Lu,Y.J., Bao,L., Fu,G., Li,N.G., Chen,Z. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-APR-2001
one DRABYC01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                               ganglion
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Murinae;
                                                                                                                                                                                              Park,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
ر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_block:
US-09-680-121-2 x
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: BG665092
                                                                                                                                                                                                                                          451
                                                                                                                                                                                                                                                                                                     401
                                                                                                                                                 187
                                                                                                                                                                                501
                                                                                                                                                                                                                                                                        153
                                                                                                                                                                                                                                                                                                                                   137
                                                                                                                                                                                                                                                                                                                                                                 351
                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                        103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101
                                                                                         203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ePheSerAlaPheGlyLeuValPheThrValSerLeuPheAlaTrpIleC
   ACGAAACCTTCACATTCTATGGGGTCCCTTATCC.CACATCCAAGAGCTG
                                                                                                                                                                                                                                                                                                     GAGAGCTTGAAGTCCAGCACTTCCCTCACTTCAGAGGAGAAACAAGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality: 1016.50
Ratio: 4.458
milarity: 92.308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG665092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent
```

```
/tissue_type="dorsal
/dev_stage="adult"
196 c 168 g
                                        /clone_lib="Rat DRG
/sex="male"
                                                        Library"
                            root ganglion"
  165
```

Identity: Length: Gaps: 2 83.806

to:

GCTGCCAGAGAAGATCACGCTAAGTCCAACAAGACTCCTCCATACAAGTT ysCysGlnArgLysSer.SerLysSerAsnLysThrProProTyrLysPh ||||||||||| CTTCAGTGCTTTTGGCCTGGTCTTCACTGTGTCTCTCTTTGCCTGGATCT 150 53 100

TTGCCTAACCTTTCCCTGCACCTTGATCTCGAGAAGCGAGACCTCAATGG ValProLysAsnSerLeuHisLeuAspLeuGluLysArgAspLeuAsnGl 103 300

yAsnPheProLysThrAsnLeuLysProGlySerProSerAspLeuGluA 120 CAATTTCCCCAAAACCAACCCCAAAGCTGGCAGCTCTTCTGATCTGGAAA 350

snAlaThrProLysLeuPheLeuGluGlyGluLysGluSerValSerPro 136 ATGTCACCCCAAAGCTCTTTCCGGAGACGGAAAAGGAGGCCGTCTCCCCT 400

GluSerLeuLysSerSerThrSerLeuThrSerGluGluLysGlnGluLy 153 450

sLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLysAlaP 170 GCTGGGCACTCTTCTTGTCTCTAGAGTACAACTTCGAGAAGAGAGCAT

heValYalAsnIleLysGluAlaArgGlyLeuProAlaMetAspGluGln 186
|||||||||||||||||:::|||||||||||||||:::
TTGTGGTGAACATCAAGGAAGCCCAGGGCTTACCAGCCATGGATGAACAC 550

600 203

sHisLysValLysThrArgValLeuArgLysThrLeuAspProAlaPheA 220

spGluThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeu GCACACAGTGAAAACCACAGTGCTGGAAGACGCTGGACCCCGTGTTTG 699 650 236

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-680-121-2 x AV606332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
LOCUS AV606332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_name: gb_est1:AV606332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                       Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: AV606332 from: 1 to: 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
JOURNAL
                                                                            112
                                                                                                289 lyGluLeuILeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThr 305
272 uMetAsnArgGluIleIleLysArgAsnValArgLysSerSerGlyArgG 289
                                                                                                                                                                                                                                                              256 GluValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLysMetLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          237 AlaLeuHisPheThrIleLeuSerPheAspArgPheSer 249 :::
                                                                                                                                                                                                                                     12
                                                                            GTGAGTTATTGATCTCTCTCTGCTACCAGTCCACCACAAATACTCTTACT 161
                                                                                                                                                    AATGAACAGAGAGTTACCAAGAGAAATGTTAGGAAATCTTCAGGACGGG 111
                                                                                                                                                                                                                                   GAAGTCCTGATTCCTCTGGCAGGAATTGAATTAACTAATGGAGAAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCTGC...ACTCAACAGGCTGAGTTTGACAGGTTTTCA 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (200)
Contact: Yoshikazu Sugimoto
Animal Genetics Division
Shirakawa Institute of Animal Genetics
Odakura, Nishigo, Nishi-shirakawa, Fukushima 961-8061, Japan
Tel: 81-248-25-541sh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV606332 Bos taurus kidney fetus Bos taurus cDNA clone EIKI034B06 5', mRNA sequence.

AV606332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Single pass sequencing.
This clone was obtained from a polyA-deleted cDNA library.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovidae; Bovinae; B
1 (bases 1 to 565)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: kazusugi@cocoa.ocn.ne.jp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bovine cDNA sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Suzuki, H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sugimoto, Y., Hirotsune, S., Takasuga, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AV606332.1 GI:9736705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                þ
                                                                                                                                                                                                                                                                                                                                                                                                       845.00
5.000
99.412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Bos taurus"
/db_xref="taxon:9913"
/clone="ElkI034B06"
/clone_lib="Bos taurus kidney fetus"
/tissue-"kidney"
/dev_stage="fetus"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="Vector: pZL1; Site_1: Sal1; Site_2: Not1; Poly A was deleted from a Not1 site"
110 c 144 g 148 t 1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1. .565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bos.
                                                                                                                                                                                                                                                                                                                                                                                            Length: 170
Gaps: 0
Percent Identity: 94.706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Itoh, R.,
                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Jitohzono, A. and
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
ORGANISM
ORIGIN
                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_documentation_block:
LOCUS BG261870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_name: gb_est2:BG261870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       372 1GluPheLeuValLeuAspSerGluArgGlySerArgAsnGluValI1eG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               356 GluLeuPheValPheAspIleProCysGluGlyLeuGluAspIleSerVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        339 erLysLysThrHisValLysLysCysThrProAsnAlaValPheAsn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    262 CTAAAAAGAAGACACATGTGAAGAAATGCACGCCCAATGCAGTGTTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
Email: Gapbs -r@mail.nih.gov
Tissue Procurement: The Cepko Laboratory
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM10316 row: k. column: 17
High quality sequence stop: 689.
1 1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LysGluIleCysAspTyrProArgArgGlnIleAlaLysTrpHisValLe 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lyGlnLeuValLeuGlyAlaAlaAlaGluGlyThrGlyGlyGluHisTrp 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTGATGGT 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     uCysAspGly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGCGGTTGGTCCTGGGAGCAGCAGCAGAAGGAGCTGGTGGAGAGCACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAATTTCTGGTTTTGGATTCTGAAAGGGGATCCCGAAATGAGGTGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAACTCTTTGTCTTTGACATTCCTTGTGAGGGTCTAGAAGAGATAAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
1 (bases 1 to 1174)
11 (bases 1 to 1174)
NH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG261870 1174 bp mRNA EST 13-FEB-2001 602373670F1 NIH_MGC_94 Mus musculus cDNA clone IMAGE:4481416 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG261870.1 GI:12771686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              house mouse
                                              348
             /organism="Mus musculus"
//db_xref="taxon:10090"
//db_xref="taxon:10090"
//clone_lib="NIMGE:481416"
//clone_lib="netina"
//tissue_type="retina"
//lab_host="DH10B (phage-resistant)"
//note="0rgan: eye; Vector: pcMV-SPORT6; Site_1: Not1;
//note="0rgan: eye; Vector: pcMV-SPORT6; Site_1: Not1;
//note="0rgan: eye; Vector: bcMy-SPORT6; Site_1: Not1;
//note="0rgan: bcMy-SPORT
                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           261
```

```
seq_documentation_block:
LOCUS BG672430
                                                                   seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alignment_block:
US-09-680-121-2 x BG261870
              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Align seg 1/1 to: BG261870
                                                                                                                                                                                                                                                                                                                                             150
                                                                                                                                                                                                                                                                                                                                                                         568
                                                                                                                                                                                                                                                                                                                                                                                                  134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              318
                                                                                                                                                    768
                                                                                                                                                                             199
                                                                                                                                                                                                        718
                                                                                                                                                                                                                                   182
                                                                                                                                                                                                                                                              899
                                                                                                                                                                                                                                                                                       166
                                                                                                                                                                                                                                                                                                                   618
                                                                                                                                                                                                                                                                                                                                                                                                                             518
                                                                                                                                                                                                                                                                                                                                                                                                                                                       117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34 låTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Н
                                                                                                                                                                                                       CATGGAGGAAGCATCCATGAGCCCTGAACCGTACATCCAAATGACGAATC 767
                                                                                                                                                                                                                     aMetAspGluGlnSerMetThrSerAspProTyrIleLysMetThr.Ile 198
:|||:::||| |||||||::: :::||||||||||
                                                                                                                                                                                                                                                         alSerProGluSerLeuLysSerSerThrSerLeuThrSerGlu.GluLy 150
                                                                                                                                                                                                                                                                                                                                                                                                                                        pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      uAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           lValGlyIlePheSerAlaPheGlyLeuValPheThrValSerLeuPheA 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa
                                                                                                                      alLeuArgLysThrLeuAspProAlaPheAspGluThrPhe 223
                                                                                                                                                 TTACAGGAGAAGCCCAAGGGACCAAGGGCCCAGAAAAACGAGACA
                                                                                                                                                                LeuProGluLysLysHisLys......ValLysThrArg.V 210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGCCGCTCTGCCCAACCTTTCCCTGCATCTTGACCTAGAGAAGCGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ysProAlaValProLysAsnSerLeuH1sLeuAspLeuGluLysArgAsp 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGTAGCAAAAAGAAGTTTGGAGGAGAGAAGAGTGAAGTGAAGGGTA 417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTGGATCTGCTCAGAGAAGATCAGCCAAATCCAACAAGACTCCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGGGCATCTTCAGTGCTTTTTGGCCTCGTCTTCACTGTCTCTCTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGCTCCTATCACCACCAGCCGCGTGGAATTCGATGAAATTCCCACAGT
                                                                                              CGTTTGAGAAAACCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                            CTCAATGGCAACTTCCCCAAAGCCAACCCCAAAGCTGGCAGCTCTTCTGA
                                                                   gb_est2:BG672430
              DRNCIC06 Rat DRG Library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality:
mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                802.50
3.993
86.266
                            đđ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent
                             mRNA
              Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps:
Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1174
              norvegicus cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75.107
                                                                                              843
                                                                                                                                                                                                                                                                                                                                           166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           217
              clone
                                                                                                                                                 817
                                                                                                                                                                                                                                                                                                                                                                       617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  317
                                                                                                                                                                                                                                                                                                                  667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      17
                          30-APR-2001
              DRNCIC06
              <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                           103
              174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                 53
```

```
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                            US-09-680-121-2 x BG672430
                                                                                                                                                                                                                                                                                                                                                                  Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
                                                                                                                                                                                                                                                                                        141 erSerThrSerLeuThrSerGluGluLysGlnGluLysLeuGlyThrLeu
                                                                                                                                                                                                                                                  124 sLeuPheLeuGluGlyGluLysGluSerValSerProGluSerLeuLysS
eLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerMetThrSerA 191
                                                         TTCTTGTCTCTAGAGTACAACTTCGAGAAGAAGCATTTGGGGTGAACAT
                                                                                                                                                                                                               PhePheSerLeuGluTyrAsnPheGluArgLysAlaPheValValAsnI1 174
                                                                                                                                     CCAGCACTTCCCTCACTTCAGAGGAGAAACAAGAGAAGCTGGGCACTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: xu.zhang@ion.ac.cn
This clone is also available at Chinese National Human Genome
There at Shanghai, 351 Guo Shoujing Road, Zhangjiang Hi-Tech
Pudong New Area, P.R.China. Please contact with Zhang Xu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Institute of Neuroscience
320 Yue Yang Road, Shanghai 200031,
Tel: 86-21-64748700-121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (2001)
Contact: Zhang Xu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (bases 1 to 523)
Xiao,H.S., Han,Z.G., Zhang,F.X., Huang,Q.H., Lu,Y.J., Bao,L., Fl, Guo,C., Yan,Q., Jin,S.X., Zhu,Z.D., Xu,X.R., Li,N.G., Chen,Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG672430
BG672430.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Distinct gene expression profiles of rat dorsal root ganglion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seq primer: T3 POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (xu.zhang@ion.ac.cn) or Han Zeguang (hanzg@chgc.sh.cn)
PCR PRimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fax: 86-21-64713446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Laboratory of Sensory System
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         induced by peripheral nerve axotomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Zhang, X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Norway rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BACKWARD: T7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FORWARD: T3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
                                                                                                                                                                                                                                                                                                                                                                      to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ф
                                                                                                                                                                                                                                                                                                                                                                      BG672430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /sex="male"
/tissu="repe"dorsal root ganglion"
/dev_stage="adult"
130 c 122 g 113 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.605
93.642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Rattus norvegicus"
/strain="Sprague-Dawley"
/db_xref="taxon:10116"
/clone="DRNCICO6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         746.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib="Rat DRG Library"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:13894529
                                                                                                                                                                                                                                                                                                                                                                      from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent
                                                                                                                                                                                                                                                                                                                                                                      to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P.R.China
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
86.127
                                                           202
                                                                                                                                     152
                                                                                                                                                                           157
                                                                                                                                                                                                                 102
                                                                                                                                                                                                                                                  141
                                                                                                                                                                                                                                                                                            52
                                                                                                                                                                                                                                                                                                                                124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fu,G.
Z. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Park,
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_documentation_block:
LOCUS BG744033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_name: gb_est2:BG744033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               274 nArgGluIleIleLysArg 280 :||||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      191 spProTyrIleLysMetThrIleLeuProGluLysLysHisLysValLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHisPheT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGAGAGATCATCAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGGCCTGAGTTTTGACAGGTTCTCAAGAGATGATGTCATTGGAGAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hrIleLeuSerPheAspArgPheSerArgAspAspIleIleGlyGluVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTCTATGGGGTCCCTTATCCCCACATTCAAGAGCTGGTCCTGCACTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ThrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrPheTh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCAGAGTGCTGAGGAAGACGCTGGACCCCGTGGTTGACGAAACCTTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCCATACATCAAGATGACAATCTTACCAGAGAAGAAGCACAAAGTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGGAAGCCCAGGGCTTACCAGCCATGGATGAACAATCCATGACCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Dr. Daniel McVicar, DBS/NCI
cDNA Library Preparation: Ling Hong/Rubin Laboratory
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can
found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 858)

NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plate: LLCM1688 row: j column: 04
High quality sequence stop: 792.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human.
Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG744033 858 bp mRNA EST 15-MAY-2001 602772315F1 NIH_MGC_106 Homo sapiens cDNA clone IMAGE:4849251 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       http://image.llnl.gov
Plate: LLCM1688 row:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG744033.1 GI:14054686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA sequence.
BG744033
                                              230
                       /Organism="Homo sapiens"
//db_xref="taxon:9666"
//clone=_lib="NMAGE:4849551"
//clone=_lib="NHAGE:4849551"
//clone=_lib="NHAGE:4849551"
//lissue_type="natural killer cells, cell line"
//lissue_type="natural killer cells, cell line"
//lab_host="DHJOB (phage-resistant)"
//note="Organ: blood; Vector: pOTB9; Site_1: XhoI; Site_2:
//note="Organ: blood; Site_1: XhoI; Site_2:
//note="Organ: blood; Site_2: XhoI; Site_2: XhoI; Site_2: XhoI; Site_2:
//note="Organ: blood; Site_2: XhoI; Site_2: X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302
seq_name: gb_est2:BF937960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_block:
US-09-680-121-2 x BG744033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Quality: 711.50
Ratio: 3.471
Percent Similarity: 84.016
                                                                                                                                                                                                                                                                                                                                                                                                                  316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        149
                                                                         GCACTTTGAACCCCATCTTCAATGAATCCTTT 767
```

```
Align seg 1/1 to: BG744033 from: 1
                                                                                             331 uTyrHisAlaLysLysArgIleSerLysLysLysThrHisValLysLysC
                                                                                                                                                                                                                                                                                                  587 CTGTGGCACAGAGAATGACAGTGGTGGTCCTCAAAGCCAGACACTTGCCG
                                                              687 CTACTACGGCAGAAAGCGCATTGC
                                                                                                                                                                                637 AAGATGGATATCACCGGTCTCTCAGGTAATCCTTATGTCAAGGTGAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             488 CCCAGCACAGGCAAGGTACAACTGACCAGGAC.ATCATCAAAAGGAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           166 GluArgLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAl 182
                                                                                                                                                                                                                                                                                                                                                            299 erThrThrAsnThrLeuThrValValLeuLysAlaArgHisLeuPro 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             266 LeuSerGluGlyLysMetLeuMetAsnArgGluIleIleLysArgAsnVa 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             116 AACCACCTCTCCA.....TCATCTCCAG 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      116 SerAspLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGl 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        132 uSerValSerProGluSerLeuLysSerSerThrSerLeuThrSerGluG 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               lArgLysSerSerGlyArgGlyGluLeuLeuIleSerLeuCysTyrGlnS 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nIleGlnGluLeuAlaLeuHisPheThrIleLeuSerPheAspArgPheS 249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AspProAlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    euProGluLysLysHisLysValLysThrArgValLeuArgLysThrLeu 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      aMetAspGluGlnSerMetThrSerAspProTyrIleLysMetThrIleL 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAGGATGTCATGCTAGGATCCCTCACCTTCTCAGTGGACTATAACTTC 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             luLysGlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPhe 165
ysThrProAsnAlaValPheAsnGluLeuPhe 358
                                                                                                                                                                                                                                    LysSerAspValSerGlyLeuSer...AspProTyrValLysValAsnLe
                                                                                                                                                                                                                                                                                                                                                                                                                       CCAGAAGTGCATCAGCAGAGGGGAGCTCCAGGTGTCTCTGTCATATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCGGGATGATGTCATTGGCGAGGTCATGGTGCCACTGGCAGGGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               erArgAspAspIleIleGlyGluValLeuIleProLeuSerGlyIleGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGCAGGACCTGGTGCTGCACTTCCTTGTCCTCAGCTTTGACCGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACCCTGTGTTTGACGAGACCTTCACCTTCTATGGCATCCCCTACAGCCA 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCCTGACAAACGGCATCGGGTGAAGACCAGAGTGCTGCGGAAGACCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGGATGACCAGACCCAGGA.TCTGACCCCTACATCAAAATGACCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGAAAAAAGCCCTGGTGGTGACAATCCAGGAGGCCCACGGGCTGCCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Identity: 61.066
                                                              . AAGAAGAAAACCCATGTGAAGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
6
                                                                                                                                                                                686
                                                                                                                                                                                                                                                                                                     636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       287
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                              alignment_block:
US-09-680-121-2 x BF937960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq_documentation_block:
                                                                                                                                                                                                                                                                                Align seg 1/1
                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
       121
                                                                                                                                                                                                               154 LeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLysAlaPh 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                  187
                                                                                                71
                                                                                                                                                                                            21
erMetThrSerAspProTyrIleLysMetThrIleLeuProGluLysLys 203
:: :::|||||||||||||
CAGGCAGCTCTGACCCCTATGTGAAGATGACCATTCTGCCTGAGAAGAAG 170
                                                                                                                 eValValAsnIleLysGluAlaArgGlyLeuProAlaMetAspGluGlnS 187
                                                                                              GGTCGTGACTATCATAGGGGCGCGCAGGGGCTCCCAGCAGTGGATGAACAGG
                                                                                                                                                                                       CTGGGGACGCTCAGTTTGGCTATTGACTACAACTTCCCCCAAAAAAGCCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (1998)
Contact: Stephen L. Johnson
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. I
Tel: 314 286 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Clark, M., Johnson, S.L., Lehrach, H., Lee, R., Li, F., Marra, M., Eddy, S., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwoo, K., Steptoe, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Schurk, S., Shin, T., Jackson, Y., Cardenas, M., McCann, R., Waterston, R., and Wilcon, B., T., Jackson, Y., Cardenas, M., McCann, R., Waterston, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BF937960 671 bp mRNA EST 22-JAN-2001 fm70g05.yl Zebrafish adult retina cDNA Danio rerio cDNA clone 4200777 5' similar to TR:Q9R0N3 Q9R0N3 SYNAPTOTAGMIN XI. ;, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                             Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: zbrafish@watson.wustl.edu
Library constructed by: Susan E. Brockerhoff DNA Sequencing by:
Washington University Genome Sequencing Center Clone distribution:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Verte Actinopterygii; Neopterygii; Teleostei; Eutel Cypriniformes; Cyprinidae; Rasborinae; Danio.

1 (bases 1 to 671)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                www.rzpd.de)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RessourcenZentrumPrimarDatenbank, Berlin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WashU Zebrafish EST Project 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Danio rerio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BF937960.1 GI:12355280
                                                                                                                                                                                                                                                                                                                                                                                                                       Ratio:
                                                                                                                                                                                                                                                                                  ţo:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wilson, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 314 286 1800
314 286 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                primer: T3 ET from Amersham quality sequence stop: 420.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۵
                                                                                                                                                                                                                                                                              в<u>ғ</u>937960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /dev_stage="1-2 years"
/dev_stage="1-2 years"
/lab_host="E.Coli XL1-Blue MRF' (XL1-Blue MRF')"
/note="Vector: Lambda ZAP II (pBluescript SK-);
ECORI; Site_2: SalI; This Zebrafish library was
constructed by Dr. Susan E. Brockerhoff (email:
sbrocker@u.washington.edu) RZPD library number:
a 179 c 168 g 152 t l others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Danio rerio"
/strain="wild-type"
/db_xref="taxon:7955"
/clone="4200777"
                                                                                                                                                                                                                                                                                                                                                                                               700.00
3.723
88.263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /sex="mixed"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone_lib="Zebrafish adult retina cDNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 67
                                                                                                                                                                                                                                                                                  from:
                                                                                                                                                                                                                                                                                                                                                                                                    Percent
                                                                                                                                                                                                                                                                                                                                                                                            Length:
Gaps:
Identity:
                                                                                                                                                                                                                                                                                  ;
0:
                                                                                                                                                                                                                                                                                  671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          St. Louis, MO 63108, USA
                                                                                                                                                                                                                                                                                                                                                                                               213
2
61.502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vertebrata;
Euteleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Germany
                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ostariophysi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         760"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Underwood
```

```
seq_documentation_block: LOCUS BG671553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name:
                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            353 ValPheAsnGluLeuPheValPheAspIleProCysGlu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              laLeuHisPheThrIleLeuSerPheAspArgPheSerArgAspAspIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LeuThrValValValLeuLysAlaArgHisLeuProLysSerAspValSe 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lyArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThrThrAsnThr
|||||||||||||||:::|||||||
| CGTGGGGAATTGCTGGTCTCTGTCCTATCATCCTGTTACTCACAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pGluThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HistysValtysThrArgValteuArgLysThrLeuAspProAlaPheAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTATTCAATGAATCATTTATCCTACATGTTCCCGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACGCATAGCCAAGAAGAAAACACACGTGAAGAAATGCACACTCAATCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ysArgIleSerLysLysThrHisValLysLysCysThrProAsnAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGCCTGTCAGGCAACCCTTATGTTAAAGTGAACGTCTTCTACGGCCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rGlyLeuSer..:AspProTyrValLysValAsnLeuTyrHisAlaLysL 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTAATGTGGTTGTNCTAAAGGCCAAACACCTTTCAACCATGGACATCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   {\tt AGCGCACATCACCCAGCAAATTAGCAAGAGGAACACACAGTGTGAAAGC.}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sMetLeuMetAsnArgGluIleIleLysArgAsnValArgLysSerSerG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IleGlyGluValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACTGCACTTTCTGGTGCTCACCTTTGATCGGTTTGCACGGGATGATGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGAAACGTTCACTTCTACGGCGTCCCATACAGCTCGCTGCCAGAGCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACCGGGTAAAGACGCGTGTCCTGAGGAAGACTCTGGAGCCTGTGTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_est2:BG671553
                                                                                                                                                                                              induced by peripheral nerve Unpublished (2001) Contact: Zhang Xu
                                                                                                                                                                                                                                                                                            1 (bases 1 to 791)
Xiao,H.S., Han,Z.G., Zhang,F.X., Huang,Q.H., L., Guo,C., Yan,Q., Jin,S.X., Zhu,Z.D., Xu,X.R.,
Email: xu.zhang@ion.ac.cn
This clone is also available at Chinese National Human Genome Center at Shanghai, 351 Guo Shoujing Road, Zhangjiang Hi-Tech Pudong New Area, P.R.China. Please contact with Zhang Xu (xu.zhang@ion.ac.cn) or Han Zeguang (hanzg@chgc.sh.cn)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DRNBUC05 Rat DRG Library Rattus
                                                                                                 Institute of Neuroscience
320 Yue Yang Road, Shanghai 200031,
Tel: 86-21-64748700-121
Fax: 86-21-64713446
                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                  Norway rat.
Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence
                                                                                                                                                                              Laboratory of Sensory System
                                                                                                                                                                                                                                                       Distinct gene expression profiles
                                                                                                                                                                                                                                                                                                                                                         Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG671553.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GI:13893652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      791 bp
                                                                                                                                                                                                                                                                                                                                                                         Chordata; Craniata; Vertebrata; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                         axotomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 norvegicus cDNA clone DRNBUC05 5',
                                                                                                                                                                                                                                                         of
                                                                                                                                          P.R.China
                                                                                                                                                                                                                                                         rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         656
                                                                                                                                                                                                                                                         dorsal root ganglion
                                                                                                                                                                                                                                                                                              Lu,Y.J., Ba
R., Li,N.G.,
                                                                                                                                                                                                                                                                                                                                                                             Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                               Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                             Murinae;
                                                                                                                                                                                                                                                                                                Bao, L., F., Chen, Z.
                                            Park,
                                                                                                                                                                                                                                                                                                                      EL,
```

```
alignment_block:
US-09-680-121-2 x BG671553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Align seg 1/1 to: BG671553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Similarity:
                                                                                                                                               602 TCTCCCCTGAGAGCTTGAAGTCCAGCACTTCCCTCACTTTCAGAGGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          166 uArgLysAla 169
|:::|||||
                                                                                                        150 sGlnGluLysLeuGlyThrLeuPhe.PheSer.LeuGluTyrAsnPheGl 166
                                                                                                                                                                                  134 alSerProGluSerLeuLysSerSerThrSerLeuThr.SerGluGluLy 150
                                                                                                                                                                                                                                                                                                                         101 LeuAsnGlyAsnPheProLysThrAsnLeuLysProGlySerProSerAs 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                   402 AAGTAGCAAAAAGAAGTTTGGAGGAGGATGACAAGAGTGAAGCAAAGCGTA 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       302 CCTGGATCTGCTGCCAGAGAAGATCCGCTAAGTCCAACAAGACTCCTCCA 351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            252 GGTGGGCATCTTCAGTGCTTATGGCCTGGTCTTCACTGTGTCTCTCTTTG 301
                                                                                                                                                                                                                                                                                                                                                                         67 uAsnSerLysLysPheGlyAlaAspAspLysAsnGluValLysAsnL 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34 laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro 50
||||||||||||||||||||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                17 lValGlyIlePheSerAlaPheGlyLeuValPheThrValSerLeuPheA 34
                                                                                                                                                                                                                                               pLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerV 134
ACAGAAAGCT 711
                                                                       ACACGAGAAGCTGGGCACGCTCTTCGTTCTTGGTCTCCTAGAGTCCACTTTCGA
                                                                                                                                                                                                                         TCTGGAAAATGTCACCCCAAAGCTCTTTCCGGAGACGGAAAAGGAGGCCG
                                                                                                                                                                                                                                                                                                 CTCAATGGCAATTTCCCCCAAAAGCAAGCCCAAAGCTGGCAGCTCTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCR PRIMERS
FORWARD: T3
BACKWARD: T7
Seq primer: T3
POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         688.00
4.300
93.023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="dorsal root ganglion"
/dev_stage="adult"
224 c 191 q 174 +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone_lib="Rat DRG Library"
/sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Rattus norvegicus"
/strain="Sprague-Dawley"
/db_xref="taxon:10116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="DRNBUC05"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         82.558
                                                                                                                                                 651
                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             401
```

```
ACCESSION
VERSION
KEYWORDS
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                       alignment_block:
US-09-680-121-2 x BF402440/rev
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_documentation_block:
LOCUS BF402440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq_name: gb_est2:BF402440
                                                                                                                                                                                                                                                                                        Align seg 1/1 to reverse of: BF402440 from: 1 to: 434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Seq prime POLYA=No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Norway rat.
Rattus norvegicus
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BF402440 434 bp mRNA EST 28-NOV-2000 UI-R-CA0-bhp-c-07-0-UI-S1 UI-R-CA0 Rattus norvegicus cDNA clone UI-R-CA0-bhp-c-07-0-UI 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     University of Iowa
451 Eckstein Medical Research Building Iowa City,
Tel: 319 335 8250
Fax: 319 335 9565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      yenome Res. 6 (9), 791-806 (1996)
97044477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 434)
Bonaldo,M.F., Lennon,G. and Soares,M.B.
Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: msoares@blue.weeg.uiowa.edu
Oligo-dT track not found, Not I site shown in beginning of sequence
is likely internal to the message.cDNA Library Preparation: M.B.
Soares Lab Clone distribution: clones will be available through
Research Genetics (www.resgen.com)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Soares, MB
Program for Rat Gene Discovery and Mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             discovery
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BF402440.1 GI:11390415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            primer: M13 Forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Rattus norvegicus"
/organism="Rattus norvegicus"
/strain="Sprague-Dawley"
/db_xref="taxon:10116"
/clone="UI-R-CAO-bhp-c-07-0-UI"
/clone_lib="UI-R-CAO"
/lab_host="DHIDB (Life Technologies)"
/lab_host="DHIDB (Life
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAG_SEQ=None found"
117 c 92 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    687.00
5.051
99.270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                      Length: 137
Gaps: 0
Percent Identity: 93.431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IA 52242,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;
; Murinae;
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seq_documentation_block:
LOCUS AW367632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_name:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GlyGlnLeuValLeuGlyAlaAlaAlaGluGlyThrGlyGlyGluHisTr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alGluPheLeuValLeuAspSerGluArgGlySerArgAsnGluVallle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nGluLeuPheValPheAspIleProCysGluGlyLeuGluAspIleSerV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         euCysAspGly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGGAGATCTGTGACTTCCCCAGGAGACAAATTGCTAAGTGGCATATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCGGTTGGTCCTGGGTGCCACAGCAGAAGGAAGTGGTGGGGGGCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGAATTTTTAGTTTTGGATTCTGAAAGGGGATCCCGAAATGAGGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAACTGTTTGTTTGATATTCCTTGTGAGAGTCTTGAAGAAATAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTAAAAAGAAGTCACGTGAAAAAGTGCACTCCCAACGCAGTGTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SerLysLysThrHisValLysLysCysThrProAsnAlaValPheAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTGTGATGGT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gb_est1:AW367632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AW367632 GI:6872282
EST.
                                                                                                                                                                                                                                                                                               Email: asimpsoneludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome
Project. This entry can be seen in the following URL
(http://www.ludwig.org.br/scripts/gethtml2.pl?tl=MRO&t2-MRO-HT0165-
121199-003-a09&t3=1999-11-12&t4=1)
Seq.primer: puc 18 forward
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer Rese
Rua Prof. Antonio Prudente 109,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AW367632 589 bp mF MR0-HT0165-121199-003-a09
                                                                                                                                                                                                                                                                                                                                                                                                                                   Brazil
Tel: +55-11-2704922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HCGP http://www.ludwig.org.br/ORESTES
The FAPESP/LICR Human Cancer Genome Pa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                   Fax: +55-11-2707001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 589)
                                                                                                                                                                                                                                                           quality sequence start: 11 quality sequence stop: 563.
                                        /note="Organ: head_neck; Vector: puc18; Site_1: SmaI; Site_2: SmaI; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of the puc 18 vector. Reverse transcription of the puc 18 vector.
profiles into the pUC 18 vector. Reverse transcritissue mRNA and cDNA amplification were performed low stringency conditions."
                                                                                                                                                              /db_xref="taxon:9606"
/clone_lib="HT0165"
                                                                                                                                              /dev_stage="Adult"
                                                                                                                                                                                                  /organism="Homo sapiens"
                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HT0165 Homo sapiens cDNA, mRNA sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4 andar,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01509-010,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-FEB-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Paulo-SP,
                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                          SOURCE
                                                                                                                                                                                                seq_name:
                                                                                                                          DEFINITION
                                                              KEYWORDS
                            ORGANISM
                                                                                                                                                                                                                                                                               369
                                                                                                                                                                                                                                                                                                                                                                                               487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37
                                                                                                                                                                                                                                         ΑT
```

SOURCE VERSION

KEYWORDS

422

25

75

405 125 389 175 372 225 355 275 339 325 322

FEATURES

COMMENT

```
alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                     seq_documentation_block:
LOCUS AW367662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: AW367632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-680-121-2 x AW367632
                                                                                                                                                                                                                                                                   537 CATCTTCAATGAGTCTTTCATCTACGACAGTCCCAGTGACCTCCTGTCTG 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       256 uValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLySMetLeuM 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            206 lLysThrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrP
                                                                                                                                                                                                                                                                                                                                                                                                  er......AspProTyrValLysValAsnLeuTyrHisAlaLys 335
                                                                                                                                                                                                                                                                                                                                                   LysArgIleSerLysLysThrHisValLysLysCysThrProAsnAl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCACCTTCTATGGCATCCCCTACAGCCAGCTGCAGGACCTGGTGCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           heThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SerAspProTyrIleLysMetThrIleLeuProGluLysLysHisLysVa
                                                                                                                                                                                                                                 sp 369
                                                                                                                                                                                                                                                                                                   aValPheAsnGluLeuPheValPheAspIleProCysGluGlyLeuGluA 369
                                                                                                                                                                                                                                                                                                                                   AAGCGCATTGGCAAGAAGAAACCCATGTGCAGAAGTGCACTTTGGACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GluLeuLeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGACCAGGGACATCATCAAAAGGAATATCCAGAAGTGCATCAGCAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTCATGGTGCCACTGGCAGGGGTGGACCCCAGCACAGGCAAGGTACAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCCTTGTCCTCAGCTTTGACCGCTTCTCTCGGGATGATGTCATTGGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PheThrIleLeuSerPheAspArgPheSerArgAspAspIleIleGlyGl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGACCAGAGTGCTGCGGAAGACCCTGGACCCTGTGTTTGACGAGACCT 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTGACCCCTACATCAAAATGACCATCCTTCCTGACAAACGGCATCGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity:
                                                                                                                                                                 gb_est1:AW367662
                                                                                                  AW367662 589 bp mRNA EST MRO-HT0165-191199-003-a09 HT0165 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Quality:
Homo sapiens
Eukaryota; M
                                human.
                                                                 AW367662.1
                                                                                    AW367662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             668.00
4.098
88.587
Metazoa; Chordata; Craniata; Vertebrata;
                                                                   GI:6872312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66.304
                                                                                                    cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                     536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            223
                                                                                                                  04-FEB-2000
 Euteleostomi;
```

```
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: AW367662 from: 1 to: 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-680-121-2 x AW367662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Percent Similarity:
                                                                 290 GluLeuLleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrVa 306
                                                                                                                                                               237 GGTCATGGTGCCACTGGCAGGGGTGGACCCCAGCACAGGCAAGGTACAAC
                                                                                                                                                                                        256 uValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLysMetLeuM 273
                                                                                                                                                                                                                                                            187 TTCCTTGTCCTCAGCTTTGACCGCTTCTCTCGGGATGATGTCATTGGCGA 236
                                                                                                                                                                                                                                                                                                       240 PheThrIleLeuSerPheAspArgPheSerArgAspAspIleIleGlyGl 256
                                                                                                                                                                                                                                                                                                                                                        137 TCACCTTCTATGGCATCCCCTACAGCCAGCTGCAGGACCTGGTGCTGCAC
                                                                                                                                                                                                                                                                                                                                                                              223 heThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHis 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          206 lLysThrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrP 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         190 SerAspProTyrIleLysMetThrIleLeuProGluLysLysHisLysVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                    87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37 TCTGACCCCTACATCAAAATGACCATCCTTCCTGACAAACGGCATCGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAGACCAGAGTGCTGCGGAAGACCCTGGACCCTGTGTTTGACGAGACCT 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: asimpson@ludwig.org.br
This sequence was derived from the FAPESP/LICR Human Cancer Genome Project. This entry can be seen in the following URL (http://www.ludwig.org.br/scripts/gethtml2.pl?tl-MRO&t2-MRO-HT0165-191199-003-a09&t3=1999-11-19&t4=1)
Seq primer: puc 18 forward
High quality sequence start: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HCGP http://www.ludwig.org.br/ORESTES.
The FAPESP/LICR Human Cancer Genome Project
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Simpson A.J.G.
Laboratory of Cancer Genetics
Ludwig Institute for Cancer R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           quality sequence start: 11 quality sequence stop: 563. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Organ: head_neck; Vector: puc18; Site_1: SmaI; Site_2: SmaI; A mini-library was made by cloning products derived from ORESTES PCR (U.S. Letters Patent application No. 196,716 - Ludwig Institute for Cancer Research) profiles into the pUC 18 vector. Reverse transcription of tissue mRNA and cDNA amplification were performed under low stringency conditions."

161 c 154 g 125 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         668.00
4.098
88.587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone_lib="HT0165"
/dev_stage="Adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pength: 184
Gaps: 1
Percent Identity: 66.304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Research
                                                                                                                                                               286
                                                                                                                                                                                                                                                                                                                                                        186
```

```
alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
VERSION
                                        alignment_block:
US-09-680-121-2 x AW914162
                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq_documentation_block:
LOCUS AW914162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: gb_est1:AW914162
                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
Align seg 1/1
                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               323 er.....AspProTyrValLysValAsnLeuTyrHisAlaLys 335
                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           587 AT 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        487 AAGCGCATTGGCAAGAAGAAACCCATGTGCAGAAGTGCACTTTGGACCC 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       437 CAGGTAGGGCCCCAGATCCTTATGTCAAGGTGAACGTCTACTACGGCAGA 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              306 lValValLeuLysAlaArgHisLeuProLysSerAspValSerGlyLeuS 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  369 sp 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           537 CATCTTCAATGAGTCTTTCATCTACGACAGTCCCAGTGACCTCCTGTCTG 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            352 aValPheAsnGluLeuPheValPheAspIleProCysGluGlyLeuGluA 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      387 GGTGGTCCTCAAAGCCAGACACTTGCCGAAGATGGATATCACCGGTCTCT 436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      337 GAGCTCCAGGTGTCTCTGTCATATCAGCCTGTGGCACAGAGAATGACAGT 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LysArgIleSerLysLysThrHisValLysLysCysThrProAsnAl 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Unpublished (1998)
Other_ESTs: EST345467
Contact: Lee, NH
The Institute for Genomic Research
9712, Medical Center Drive, Rockville, MD 20850, USA
Tel: (301) 838-3529
                                                                                                                                                                                                                                                                                                                                                                                                                                  Emmail: nhlee@tigr.org
This clone is available through the ATCC,
tel#703-365-2700 for further information
Seg primer: M13 Reverse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AW914162 689 bp mRNA
EST345466 Normalized rat brain
RGIAB26 5' end, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 689)
Lee,N.H., Glodek,A., Chandra,I., Mason,T.M., Quackenbush,J.,
Kerlavage,A.R. and Adams,M.D.
Rat Genome Project: Generation of a Rat EST (REST) Catalog &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AW914162.1 GI:8079835
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AW914162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rattus
to: AW914162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (301)-838-0208
                                                                                                                                                                                                                                                /organism="Rattus sp."
/db_xref="taxon:10118"
/clone="RGIAB26"
/clone=lib="Normalized rat brain, Bento Soares"
/note="Organ: brain; Vector: pT7T3Pac; Site_1: 1
Site_2: NotI"
a 137 c 173 g 197 t
                                                                                                665.00
5.076
99.242
                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
from: 1
                                                                                                     Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
rat brain,
                                                                                                                                                                                                                                              173 g
to:
                                                                                                     Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bento Soares Rattus sp. cDNA clone
                                                                                                     132
0
93.939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contact the ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (REST) Catalog & Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-MAY-2000
```

```
BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
LOCUS AW914163
                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: gb_est1:AW914163
                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               394 GlyAlaAlaGluGlyThrGlyGlyGluHisTrpLySGluIleCysAs 410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    294 SerLeuCysTyrGlnSerThrThrAsnThrLeuThrValValValLeuLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             euAspSerGluArgGlySerArgAsnGluValIleGlyGlnLeuValLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             eAspIleProCysGluGlyLeuGluAspIleSerValGluPheLeuValL
|||||||||||||||||
|TGATATTCCTTGTGAGAGTCTTGAAGAAATAAGTGTTGAATTTTTAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGCCACAGCAGAAGGAAGTGGTGGGGGGGCACTGGAAGGAGATCTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGATTCTGAAAGGGGATCCCGAAATGAGGTGATCGGGCGGTTGGTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCCTCTGTTATCAGTCCACTACAAACACGCTCACTGTGGTTGTCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCGCGGCACCTACCGAAATCTGATGTGTCTGGACTTTCAGATCCCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AW914163 712 bp mRNA
EST345467 Normalized rat brain
RGIAB26 5' end, mRNA sequence.
AW914163
                                                                                                                                                                                                                                    Contact: Lee, NH
The Institute for Genomic Re
9712, Medical Center Drive,
Tel: (301)-838-3529
Fax: (301)-838-0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus sp.
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                     Email: nhlee@tigr.org
This clone is available through the ATCC, tel#703-365-2700 for further information
                                                                                                                                                                                                                                                                                                                        Unpublished (1998)
Other_ESTs: EST345466
                                                                                                                                                                                                                                                                                                                                                                                        1 (bases 1 to 712)
Lee,N.H., Glodek,A., Chandra,I., Mason,T.M., Quackenbush,J.,
Kerlavage,A.R. and Adams,M.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST
                                                                                                                                                                                                                                                                                                                                                          Gene
                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AW914163.1 GI:8079837
                                                                                                                                                                                                                                                                                                                                                                        Rat Genome Project: Generation
                                                                                                                                                                     primer: M13 Reverse.
                      185
                      a
                                  /organism="Rattus sp."
/db_xref="taxon:10118"
/clone="RGIAB26"
/clone_lib="Normalized rat brain,
/note="Organ: brain; Vector: pT777
Site_2: NotI"
                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA
rat brain,
                      178
                                                                                                                                                                                                                                                                       Research
e, Rockville,
                                                                                                                                                                                                                                                                                                                                                                        of a Rat EST (REST) Catalog &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bento
                                                    pT7T3Pac;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Soares Rattus sp. cDNA clone
                                                                                                                                                                                                                                                                        ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EST
                                                                                                                                                                                                        contact the
                                                                                                                                                                                                                                                                        20850,
                                                                     Bento Soares
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     310
                                                    Site_1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-MAY-2000
                                                                                                                                                                                                        ATCC
                                                                                                                                                                   TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                       ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_name: gb_est1:AU035592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-680-121-2 x AW914163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores:
                                                                     FEATURES
                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: AW914163
                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             394 GlyAlaAlaAlaGluGlyThrGlyGlyGluHisTrpLySGluIleCysAs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128
                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310 sAlaArgHisLeuProLysSerAspValSerGlyLeuSerAspProTyrV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  294 SerLeuCysTyrGlnSerThrThrAsnThrLeuThrValValValLeuLy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         pTyrProArgArgGlnIleAlaLysTrpHisValLeuCysAspGly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              euAspSerGluArgGlySerArgAsnGluValIleGlyGlnLeuValLeu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           eAspIleProCysGluGlyLeuGluAspIleSerValGluPheLeuValL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTCCCCAGGAGACAAATTGCTAAGTGGCATATGCTCTGTGATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTGCCACAGCAGAAGGAAGTGGTGGGGGGGCACTGGAAGGAGATCTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGATTCTGAAAGGGGATCCCGAAATGAGGTGATCGGGCGGTTGGTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGATATTCCTTGTGAGAGTCTTGAAGAATAAGTGTTGAATTTTTAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCGCGGCACCTACCGAAATCTGATGTGTCTGGACTTTCAGATCCCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCCTCTGTTATCAGTCCACTACAAACACGCTCACTGTGGTTGTCTTAAA
                                                                                                                                                                         Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
1 (bases 1 to 813)
Sasaki,Z., Suzuki,Y., Watanabe,M., Imai,J., Shibui,A., Yoshida,K.
Hatta,H., Yamaguchi,R., Tateyama,S. and Sugano,S.
Construction of mouse full length-enriched cDNA libraries
Unpublished (1998)
                                                                                                   Contact: Katsuyuki Hashimoto
Division of Genetic Resources
National Institute of Infectious Diseases
23-1, Toyama 1-chome, Shinjuku-ku, Tokyo
Email: khashi@nih.go.jp
                                                                                                                                                                                                                                                                                                                                                                                                        AU035592 Sugano mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
                                                                                                                                                                                                                                                                                                                                                                                     mRNA sequence.
                                                                                       POLYA=No
                                                                                                                                                                                                                                                                                                                         house mouse.
                                                                                                                                                                                                                                                                                                                                                         AU035592.1 GI:3718595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ratio:
/organism="Mus musculus"
/strain="C57BL"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               665.00
5.076
99.242
                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                         813 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length: 132
Gaps: 0
Percent Identity: 93.939
                                                                                                                                                                                                                                                                                                                                                                                                        brain
                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ţo:
                                                                                                                                                                                                                                                                                                                                                                                                        mhcb
                                                                                                                                                                                                                                                                                                                                                                                                        Hus musculus cDNA clone MNCb-0621
                                                                                                                    Tokyo 162-8640, Japan
```

377 393 327 277 360 227 343 177

```
alignment_block:
US-09-680-121-2 x AU035592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alignment_scores:
Quality: 639.50
Ratio: 3.654
Percent Similarity: 82.547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Align seg 1/1 to: AU035592 from: 1 to: 813
                                                                                                                                                                            348 CysThrProAsnAlaValPheAsnGluLeuPheValPheAspIleProCy 364
                                                                                                              402 TCTACTACGGCAGAAAACGCATTGCCAAGAAGAAAACCCATGTAAAGAAG
                                                                                                                                   331 euTyrHisAlaLysLysArgIleSerLysLysLysThrHisValLysLys 347
                                                                                                                                                                                                                                                                    299 SerThrThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuPr 315
                                                                                                                                                                                                                                                                                                                                    199 LeuProGluLysLysHisLysValLysThrArgValLeuArgLysThrLe 215
364 sGluGlyLeuGluAspIleSerValGluPheLeuValLeuAspSerGluA 381
                                                                                                                                                                                                                                              302 CCCGTCGCACAGAGAATGACAGTGGTGGTCCTCAAAGCCAGACACTTGCC 351
                                                                                                                                                                                                                                                                                                                252 TTCAGAAGTGCATTAGCAGAGGGGAACTCCAGGTATCTCTGTCATACTAG 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        232 lnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerPheAspArgPhe 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    215 uAspProAlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrG 232
                                              TGCACTTTGAACCCCGTCTTCAATGAGTCGTTCATCTATGACATTCCCCAC 501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCTGCAGGACCTGGTGCTGCATTTCCTGGTGCTCAGCTTTGATCGATTC 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGACCCGGTGTTCGATGAGACCTTCACCTTCTACGGCATCCCGTACAGCC 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCCCGGACAAGCGGCATCGAGTGAAGACCCGAGTGCTTCGCAAGACGCT 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        216 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /dev_stage="adult"
/lab_host="TOP10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="MNCb-0621"
/clone_lib="Sugano mouse brain mncb"
/sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length: 212
Gaps: 4
Percent Identity: 58.962
```

584	397	552	381	502
584 CTTGATCNTTGGGGGGAACACAATGGTCACAA 615	397 laGluGlyThrGlyGlyGluHisTrpLysGlu 407	552 GCACTACTTAAGAATGAAGGTGGTANGGGAA	381 rgGlySer.ArgAsnGlu.ValIleGlyGlnLeuValLeuGlyAlaAlaA 397	502 CGACCTINIGCCIGATATCACAINGAGITCCIIGNCAITTGACIICGAIC 551

• .

1770 1770 2073 2073 2073

```
Query length:
Database: Issu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM of: US-09-680-121-2 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Search time (sec): 88.380000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Database sequences: 351203
Database length: 113238999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Command line parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Search information block:
                                                                                                                                                                      cgn2_6/ptodata/2/ina/5B_COMB
                                                                                                                                                                                             /cgn2_6/ptodata/2/ina/6B_COMB
/cgn2_6/ptodata/2/ina/5B_COMB
                                                                                                                                                                                                                                                                                                                                                                      cgn2_6/ptodata/2/ina/6A_COMB.seq
                                                                                                                                                                                                                                                                                                                                                                                                                'cgn2_6/ptodata/4/1110/5B_COMB.seq:
/cgn2_6/ptodata/2/ina/5B_COMB.seq:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-036-315-1 + /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-872-979-4 +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -Q-/cgn2_1/USPTO_Spool/US9680121/runat_12122001_105512_22747/app_query.fasta_1.488
-DB=Issued_Patents_NA -QFMT=fastap -SUFFIX=p2n.rni
-GAPOP=12.000 -GAPEXT=4.000 -MIMMATCH=0.100 -LOOPCL=0.000
-LOOPEXT=0.000 -GAPOP=4.500 -GAPEXT=0.050 -XGAPOP=10.000
-XGAPEXT=0.500 -FGAPOP=4.500 -FGAPEXT=0.050 -YGAPOP=10.000
-YGAPEXT=0.500 -FGAPOP=6.000 -FGAPEXT=7.000 -YGAPOP=10.000
-YGAPEXT=0.500 -DELOP=6.000 -DELEXT=7.000 -YGAPOP=10.000
-YGAPEXT=0.500 -DELOP=6.000 -DELEXT=7.000 -YGAPOP=10.000
-YGAPEXT=0.500 -FGAPOP=6.000 -DELEXT=7.000 -YGAPOP=10.000
-YGAPEXT=0.500 -PGAPOP=6.000 -DELEXT=7.000 -YGAPOP=10.000
-YGAPEXT=0.500 -PGAPOP=6.000 -DELEXT=7.000 -YGAPOP=10.000
-YGAPEXT=0.500 -PGAPOP=6.000 -DELEXT=7.000 -YGAPOP=10.000
-YGAPEXT=0.500 -PGAPOP=6.000 -PGAPOP=10.000
-YGAPEXT=0.500 -PGAPOP=6.000 -PGAPEXT=0.000 -YGAPOP=10.000
-YGAPEXT=0.500 -PGAPOP=6.000 -PGAPOP=6 -ICPU=3 -LONGLOG -NO_XLPXY
                                                                                                                                                                                                                                                                                  cgn2_6/ptodata/2/ina/6A_COMB
                                                                                                                                                                                                                                                                                                      cgn2_6/ptodata/2/ina/5B_COMB.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cgn2_6/ptodata/2/ina/5B_COMB.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WAIT -THREADS=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MODEL=frame+_p2n.model -DEV=xlp
                                                                                                                                                                                                                                                                                                                           2_6/ptodata/2/ina/5B_COMB.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2_6/ptodata/2/ina/5B_COMB.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _6/ptodata/2/ina/6A_COMB.seq:US-09-094-714A-48 +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _6/ptodata/2/ina/5B_COMB.seq:US-08-609-049A-29 + 
_6/ptodata/2/ina/6B_COMB.seq:US-09-170-996-29 +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _6/ptodata/2/ina/6A_COMB.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _6/ptodata/2/ina/6B_COMB.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Results were produced by the GenCore software, version 4.5 Copyright (c) 1993-2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-680-121-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /ptodata/2/ina/6A_COMB.seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13, 2001 12:00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Issued_Patents_NA:*
equences: 351203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Strd Orig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       out_format :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         + 2201.00 4677.32
+ 338.50 690.79
165.50 309.33 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ! Documentation
                                                                                                                                                                                                                                                                                                                                                                                           98.50
97.50
97.50
97.50
97.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.50
100.50
100.50
                                                                                    966.000
966.000
966.000
966.000
                                                                                                                                                                                                                                                                                                                                                                                           154.81
150.76
150.76
0 150.76
154.19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154.27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154.27
154.27
                                                                                                                                                                                                                                                                                                                                                                                                                                      0.5665
0.9523
0.9523
                                                                                                                                                                                                                                                                                                    0.6380
0.6380
0.1206
0.1206
                                                                                                                                                                                                                                                                                                                                                                                             0.6139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.1506
                                                                                                                                                                                                                                                                                0.1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.6075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7.0e-253
                                                                                                                                                                                                                                                                                                                                                                                                                  0.9523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.6075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pa
                                                                                                                                                  alignment_block:
151 ATGGCTCCGATCACCAGCCGGGAAGAATTTGATGAAAATCCCCACAGT 200
                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                    1 MetAlaProIleThrThrSerArgGluGluPheAspGluIleProThrVa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
```

```
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-397-979-11
/cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-397-979-13
/cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-929-501-25
/cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-929-501-26
/cgn2_6/ptodata/2/ina/5A_COMB.seq:US-09-140-177-25
                                                                                                                                                                                             ; OTHER INFORMATION: US-09-036-315-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-036-315-1
                                                                                                                                           alignment_scores:
Align seg 1/1 to: US-09-036-315-1
                                      US-09-680-121-2
                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Patent No. 6218523

GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: (415) 576-03 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 60/047,811 FILING DATE: 15-MAY-1997 PRIOR APPLICATION NUMBER: US 60/041,246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 01
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 07-MAR-1997
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Yamamoto, Karen K.
TITLE OF INVENTION: Prostate Cancer-Specific Marker
                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 00 CLASSIFICATION:
                                                                                                                                                                                                                                NAME/KEY: CDS
LOCATION: 151.
                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Storella, John REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                      Quality: 2201.00
Ratio: 5.179
milarity: 100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Application US/09036315
                                                                                                                                                                                                                                                                                                                                       nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Two Embarcadero Center, Eighth Floor
                                                                                                                                                                                                                                                                                                                                                        3891 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Schneider,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                      x US-09-036-315-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  French, Cynthia K.
                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Townsend and Townsend and Crew LLP
                                                                                                                                                                                                                                                                                                                                                                                                                              (415) 576-0200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         06-MAR-1998
                                                                                                                                                                                                                                                                                     CDNA
                                                                                                                                                                                                                                                                                                                   single
                                                                                                                                                                                                                                  .1425
                                                                                                                                                                                                                                                                                                                                                                                                           576-0300
                                                                                                                                                                                                              /product= "Repro-PC-1.0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/09/036,315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patrick A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               32,944
                                                                                        Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 018002-000210US
   from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Version
   to: 3891
                                                                                          100.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96
96
96
96
96
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              164
164
162
162
162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0.1551
0.1551
0.2009
0.2009
0.2009
```

17

51

```
401 AGCCAGCTGTGCCAAAGAATTCATTGCATCTGGATCTTGAAAAGAGAGAT 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 TACAAGTTTGTGCATGTGCTTAAGGGAGTTGATATTTACCCTGAAAACCT 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34 laTrpIleCysCysGlnArgLysSerSerLysSerAsnLysThrProPro 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84 ysProAlaValProLysAsnSerLeuHisLeuAspLeuGluLysArgAsp 100
 TyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnLe 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetA 184
                                                   AAGAATTGGCCTTGCACTTCACAATTTTGAGTTTTGACAGGTTTTCAAGA 900
                                                                                                                                                                                                                                                                                                                                                                                                                     700
                                                                                            Seq_documentation_block:
Sequence 4, Application US/08872979
Patent NO. 6074844

GENERAL IMPORMATION:
APPLICANT: Hillman, Jennifer L.
APPLICANT: Corley, Neill C.
APPLICANT: Hillman, Jennifer L.
APPLICANT: Corley, Neill C.
APPLICANT: Hillman, Jennifer L.
APPLICANT: Corley, Neill C.
APPLICANT: Corley, Neill C.
APPLICANT: Hillman, Jennifer L.
APPLICANT: Corley, Neill C.
APPLICANT: Corley, Neill C.
APPLICANT: Corley, Neill C.
STREET: 3174 Porter Drive
CITY: Palo Alto
STATE: CA
COUNTRY: USA
A ZIP: 94304
COMUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION UNMBER: US/08/872,979
FILING DATE: Herewith
CLASSIFICATION DATA:
APPLICATION UNMBER: US/08/872,979
FILING DATE: Herewith
APPLICATION UNMBER: US/08/872,979
REGISTRATION UNMBER: 36,749
REGISTRATION UNMBER: 36,749
REGISTRATION UNMBER: PF-0320 US
TELEPONE: 415-855-0555
TELEPONE: 415-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-872-979-4
TELEX:
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 1207 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1151 CCAAAAAGAGAATCTCCAAGAAGAAGACTCATGTGAAGAAATGCACCCCC 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1351 GGTGGAGAGCACTGGAAAGAGATCTGTGACTACCCCAGGAGACAAATTGC 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1401 CAAGTGGCACGTGCTCTGTGATGGT 1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   334 lalysLysArgIleSerLysLysLysThrHisValLysLysCysThrPro 350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            417 aLysTrpHisValLeuCysAspGly 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          401 GlyGlyGluHisTrpLySGluIleCySASpTyrProArgArgGlnIleAl 417
```

501 117

167

801 217

851 234

901

267

1001

```
alignment_scores:
Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; LIBRARY: LUNGNOT12
; CLONE: 1003941
US-08-872-979-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block:
US-09-680-121-2 x US-08-872-979-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Align seg 1/1 to: US-08-872-979-4 from: 1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                219
                                                                               804
                                                                                                                                                                               766
                                                                                                                                                                                                                             312
                                                                                                                                                                                                                                                                              716
                                                                                                                                                                                                                                                                                                                                                                                  666
                                                                                                                                                                                                                                                                                                                                                                                                                                 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 443 CCGGACACAGACATGAGACAAAAGTGCACCGAGGCACGCTCTGCCCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           202 ysLysHisLysValLysThrArgValLeuArgLysThrLeuAspProAla 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              393 GCCTGGGGGCACCGTGGACCCCTATGCCCGGGTCAGCGTCTCCACCCAGG 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             355 GAGATCAGGGTGGGCCTGAGGCAGGCAGCCTG.....AT 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         169 AlaPheValValAsnIleLysGluAlaArgGlyLeuProAlaMetAspGl 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           152 luLysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLys 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              255 CCTGGTGCAACCTGATGTGGATGGCCTGGAGTCCAGCCCGGGGGATGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              205 GACAAGGAGTCCGTGGGTCTGGGCAGTGCCCGCGGCACCACCACCACCAC 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            130 GluLysGluSerValSerProGluSerLeuLysSerSerThrSerLeu..
345 alLysLysCysThrProAsnAlaValPheAsnGluLeuPheValPheAsp 361 ::|||||| |||
                                                                                                                                                                                                                                                                                                                       euCysTyrGlnSerThrThrAsnThrLeuThrValValValLeuLysAla 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GlyLysMetLeuMetAsnArgGluIleIleLysArg...... 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            uLeuAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArgAspA 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PheAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGl 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               uGlnSerMetThrSerAspProTyrIleLysMetThrIleLeuProGluL 202
                                                                             GGTCCAGCTCATGCTGAACCAGAGGAAGTGGAAGAAGAGAAAGACAGCCA 853
                                                                                                                           sValAsnLeuTyrHisAlaLysLysArgIleSerLysLysLysThrHisV 345
                                                                                                                                                                         CGAGGCCTGCGT.....CCAGGACTTGCAGAGCCCTACGTGAA 803
                                                                                                                                                                                                                             ArgHisLeuProLysSerAspValSerGlyLeuSerAspProTyrValLy 328
                                                                                                                                                                                                                                                                              TCCGGTACGTGCCCAGCTCAGGCCGGCTGACCGTGGTGGTGCTGGAGGCT 765
                                                                                                                                                                                                                                                                                                                                                                                CCCGCCGGCTGCCACTCAGCCCGAGCAGGTCGGGGAGCTGTGCTTCTCTC 715
                                                                                                                                                                                                                                                                                                                                                                                                                            .....AsnValArgLysSerSerGlyArgGlyGluLeuLeuIleSerL 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCCCCTGGGTGAGCTCCGTCTGGCACTGGGCACCGTGGATCTG..... 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             spIleIleGlyGluValLeuIleProLeuSerGlyIleGluLeuSerGlu 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGACGAGACCTGCTGCTTCCAC...ATCCCGCAGGCGGAGCTGCCAGG 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAATGGGGGCGCCTGCAGCTCTCCCTGGAGTTCGACTTTGGAAGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .....ThrSerGluGluLysGlnG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .....CAGCATGTTCTGGAGCACTGGTACCTGCTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCCACCCTGCAGGTGCAGCTTTTCAACTTCAAGCGCTTCTCGGGGCATG 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      338.50
1.881
59.016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29.836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  354
```

```
seq_documentation_block:
;Patent NO. 5266464
;APPLICANT: HOUSEY, GERARD
;TITLE OF INVENTION: METHOD OF SCREENING FOR PROTEIN INHIBITORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alignment_block:
US-09-680-121-2 x 5266464-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 seq_name: /cgn2_6/ptodata/2/ina/backfiles1.seq:5266464-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5266464-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AND ACTIVATORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQ ID NO:1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Align seg 1/1 to: 5266464-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1004 CCCGGGCCTCGGGGCAGCCCTGCAGCACTGGGCAGACATGCTGGCCCAC 1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 3
CURRENT APPLICATION DATA:
DEPLICATION NUMBER: US/07/392,073
FILING DATE: 10-AUG-16989
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 154,206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1054 GCAGCCAGGGAGGTG 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120 AsnAlaThrProLysLeuPheLeuGluGlyGluLysGluSerValSerPr 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        412 ProArgArgGlnIle 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               954 CCGCAGCCTGCCGCTCCGAACTGAGCCCGTAGGCAAGGTGCACCTGGGTG
                                                                                                                                                                                                                                                                                608 CTCATCGTTGTAAGAGATGCTAAAAATCTGGTACCTATGGACCCCAA
                                                                                                                                                                                                                                                                                                                               170 PheValValAsnIleLysGluAlaArgGlyLeuProAlaMetAspGluGl 186
                                                                                                                                                                                                                                                                                                                                                                          564 GCCGTGGCCGCATCTAC.....ATCCAGGCCCACATCGACAGGGAGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         514 GCGCTGCGTGATGAACGTCCCCAGCCTCTGTGGCACCGACCACACAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      136 oGluSerLeuLysSerSerThrSerLeuThrSerGluGluLysGlnGluL 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        482 AATGCGACACCTCGTATGATG......AATGTCCACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              362 IleProCysGluGlyLeuGluAspIleSerValGluPheLeuValLeuAs 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   854 CCAAAAAGGGCACGGCCCCCCTACTTCAATGAGGCCTTCACCTTCCTG
218 AlaPheAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleGl :::::::||||||||| |||
                                                                       705 AAAGTGAGAGCAAGAAGACCAAGACTATCAAATGCTCCCTCAACCCG
                                                                                                                                                                              658 CGGCTTG...TCAGATCCCTACGTAAAACTGAAACTGATCCCTGATCCCA 704
                                                                                                                                                                                                                                                                                                                                                                                                                                 153 ysLeuGlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLysAla 169
                                                                                                                                                                                                                           186 nSerMetThrSerAspProTyrIleLysMetThrIleLeuProGluLysL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 10-FEB-1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 2599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       pSerGluArgGlySerArgAsnGluValIleGlyGlnLeuValLeuGlyA 395
                                                                                                                            ys.....HisLysValLysThrArgValLeuArgLysThrLeuAspPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        laAlaAlaGluGlyThrGlyGlyGluHisTrpLySGluIleCysAspTyr 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         165.50
1.655
63.694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               from: 1 to:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    953
                                                                            754
                                                                                                                            217
                                                                                                                                                                                                                                203
                                                                                                                                                                                                                                                                                  657
                                                                                                                                                                                                                                                                                                                                                                                       607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         563
```

```
seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-09-094-714A-48
                                                                                                                                           ; TOPOLOGY: US-09-094-714A-48
                                                                       alignment_scores:
Quality:
Ratio:
Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 48, Applicati
Patent No. 6117847
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/478,17
APPLICATION DATE: 07-UN-1995
PRIOR APPLICATION DATA: 08/089,99
PILING DATE: 09-UL-1993
PRIOR APPLICATION DATA: 09-UL-1993
PRIOR APPLICATION NUMBER: 07/852,85
APPLICATION NUMBER: 07/852,85
PILING DATE: 16-WAR-1992
PILING DATE: 16-WAR-1992
PILING DATE: 16-WAR-1992
ATTORNEY/AGENT INFORMATION:
NAME: PBULK K. Legaard
REGISTRATION NUMBER: 38,534
REGISTRATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                        TELEPHONE: (215) 568-310
TELEFAX: (215) 568-3439
INFORMATION FOR SEQ ID NO: 4
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: C. Frank Bennett, Nicholas M. Dean TITLE OF INVENTION: OLIGONUCLECTIDES FOR ENHANCED MODULATION OF TITLE OF INVENTION: PROTEIN KINASE C EXPRESSION NUMBER OF SEQUENCES: 69

CORRESPONDENCE ADDRESS: Moodcock Washburn Kurtz Mackiewicz & No. 6117847ris STREET: One Liberty Place - 46th Floor CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      837 TGACCAGCAGGAATGACTTCATGGGATCTCTGTCGTTTGGGATTTCA... 883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            247 rgPheSerArgAspAspIleIleGlyGluValLeuIleProLeuSerGly 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             787 GGAATCAGACAAAGACAGAAGACTGTCCGTAGAGATCTGGGATTGGGACC 836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      234 nGlu.....LeuAlaLeuHisPheThrIleLeuSerPheAspA 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  755 GAGTGGAACGAAACCTTCAGATTT.....CAGCTGAA 786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PS/2

OPERATING SYSTEM: PC-DOS
OPERATING SYSTEM: PC-DOS
SOFTWARE: WORDEREFECT 8.0

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/094,714A
FILLING DATE: June 15, 1998
CLASSIFICATION: 435
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    264 IleGluLeuSerGluGlyLys 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/601,269
FILING DATE: 14-FEB-1996
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: DISKETT
                                                                                                                                                TYPE: nucleic acid
TYPE: nucleic single
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ...GAACTAGCAGAAAGCCGG 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                b, Application US/09094714A
6117847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISKETTE, 3.5 INCH, 1.44 Mb STORAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UMBER: 07/852,852
16-MAR-1992
     161.00
1.464
62.147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08/478,178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08/089,996
        Percent Identity: 28.249
                                                                                                                                                                                                                                                                                                                                                                                   ISIS-2943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6117847ris, LLP
```

```
alignment_block: us-09-680-121-2 \times us-09-094-714A-48
                                                                                                                                                                                                                                                                                                                                                                                                                                                            seq_documentation_block:
; Sequence 24, Application US/09225749
; Patent No. 6300320.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-225-749-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Align seg 1/1 to: US-09-094-714A-48 from: 1 to: 2244
                                                                                                                                   NAME/KEY: CDS
LOCATION: (28)..(2046)
PUBLICATION INFORMATION:
JOURNAL: Nucleic Acids Res.
VOLUME: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  505 GGGCGGATTTACCTAAAGGCTGAGGTTGCTGATGAAAAG.....CTCCA 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       455 GCGTCATCAATGTCCCCCAGCCTCTGCGGAATGGATCACACTGAGAAGAGG 504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138 erLeuLysSerSerThrSerLeuThrSerGluGluLysGlnGluLysLeu 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     405 CCATCAAGGGATGAAATGTGACACCTGCGATATGAACGTTCACAAGCAAT 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   127 .LeuGluGlyGluLys......GluSerValSerProGluS 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       355 GGAAGCCCCACCTTCTGCGATCACTGTGGGTCACTGCTCTATGGACTTAT 404
                                                                                                                           FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                188 etThrSerAspProTyrIleLysMetThrIleLeuProGluLysLysHis 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       549 TGTCACAGTACGAGATGCAAAAAATCTAATCCCTATGGATCCAAACGGGC 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  171 lValAsnIleLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerM 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   155 GlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLysAlaPheVa 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113 GlySerProSerAspLeuGluAsnAlaThrProLysLeuPhe.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            646 GAAAGCAAGCAAAAACCAAAACCATCCGCTCCACACTAAATCCGCAGTG 695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        599 TT...TCAGATCCTTATGTGAAGCTGAAACTTATTCCTGATCCCAAGAAT 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            746 TGTCTGTAGAA.....ATCTGGGACTGGGATCGAACAACAAGGAATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             696 GAATGAGTCCTTTACATTCAAATTGAAACCTTCAGACAAAGACCGACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        219 eAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGluL 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840 CAGTGGATGGTACAAGTTGCTTAACCAAGAA 870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             790 TTCATGGGATCCCTTTCCTTTGGAGTTTCGGAGCTGATGAAGATGCCGGC 839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              253 IleIleGlyGluValLeuIleProLeuSerGlyIle......GluLe 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          236 euAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArgAspAsp 252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            266 uSerGluGlyLysMetLeuMetAsnArgGlu 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .....LysValLysThrArgValLeuArgLysThrLeuAspProAlaPh 219
```

```
; PAGES: 2183
; DATE: 1990-04-25
; DATABASE ACCESSION NUMBER: X52479/Genbank
; DATABASE ENTRY DATE: 1993-09-12
US-09-225-749-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                alignment_block: us-09-680-121-2 \times us-09-225-749-24
                                                                                                                                                                                                     seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
                                                                                                                                                                                                                                                   seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-609-049A-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: US-09-225-749-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratio:
Percent Similarity:
                                                                                                                         Sequence 29, Application US/08609049A Patent No. 5948664 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ISSUE: 8
APPLICANT: Williams, Lewis T. APPLICANT: MOLZ, LISA APPLICANT: Chen, Yen-Wen TITLE OF INVENTION: NO. 59486 NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 455
                                                                                                                                                                                                                                                                                                                                                                                                          790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            646 GAAAGCAAGCAAAAACCAAAACCATCCGCTCCACACTAAATCCGCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           171 lValasnIleLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerM 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 405 CCATCAAGGGATGAAATGTGACACCTGCGATATGAACGTTCACAAGCAAT 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               355 GGAAGCCCCACCTTCTGCGATCACTGTGGGTCACTGCTCTATGGACTTAT 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             113 GlySerProSerAspLeuGluAsnAlaThrProLysLeuPhe.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          696 GAATGAGTCCTTTACATTCAAATTGAAACCTTCAGACAAAGACCGACGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             138 erLeuLysSerSerThrSerLeuThrSerGluGluLysGlnGluLysLeu 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           253 IleIleGlyGluValLeuIleProLeuSerGlyIle......GluLe 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      236 euAlaLeuHisPheThrIleLeuSerPheAspArgPheSerArgAspAsp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .....LysValLysThrArgValLeuArgLysThrLeuAspProAlaPh 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           etThrSerAspProTyrIleLysMetThrIleLeuProGluLysLysHis 204
                                                                                                                                                                                                                                                                                                                                                   uSerGluGlyLysMetLeuMetAsnArgGlu 276
                                                                                                                                                                                                                                                                                                                                                                                                       TTCATGGGATCCCTTTCCTTTGGAGTTTCGGAGCTGATGAAGATGCCGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        eAspGluThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGluL 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TT...TCAGATCCTTATGTGAAGCTGAAACTTATTCCTGATCCCAAGAAT 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCACAGTACGAGATGCAAAAAATCTAATCCCTATGGATCCAAACGGGC 598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGCGGATTTACCTAAAGGCTGAGGTTGCTGATGAAAAG.....CTCCA 548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GlyThrLeuPhePheSerLeuGluTyrAsnPheGluArgLysAlaPheVa 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGTCATCAATGTCCCCAGCCTCTGCGGAATGGATCACACTGAGAAGAGG 504
                                                                                                                                                                                                                                                                                                       CAGTGGATGGTACAAGTTGCTTAACCAAGAA 870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTCTGTAGAA....ATCTGGGACTGGGATCGAACAACAAGGAATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         161.00
1.464
62.147
                            5948664el PI 3-Kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps: Percent Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to: 2245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.249
                       Polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       789
```

```
alignment_block:
US-09-680-121-2 x US-08-609-049A-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; LOCATION: US-08-609-049A-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Align seg 1/1 to: US-08-609-049A-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 415-326-2422 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                  4187 AGATGCACTTCAGCCCCAAACTACAGATGCTGAAGCTACTATTTTCTTTA 4236
                                                                                                                                                                                                                                                                                                                                                                                 4137 CCTTCAGGATTGCCAGAACTCACAAGTATTCAGGATCTGAAATATGTTAG 4186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 5.285 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: USA
ZIP: 94111-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                            4281 AATTTC.....TTCATTCATAACCTTGCTCAGCTACGTTTTTC 4318
                                                                                                                                                                                                               4237 CTAGGCTGATTGAGTCAAGTTTGGGAAGCATT.....GCCACAAAGTTT 428(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: TWO CITY: San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: DOW, Karen B.
REGISTRATION NUMBER: 29,684
REFERENCE/DOCKET NUMBER: 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, 8th Floor
                                                                                                                                                                 164 AsnPheGluArgLysAlaPheValValAsnIleLysGluAlaArg..... 178
                                                                                                                                                                                                                                                                                                                                 131 sGluSerValSerProGluSerLeuLysSer...SerThrSerLeuThrS 147
                                                                                                                                                                                                                                                                                                                                                                                                                        115 ProSerAspLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLy 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCATION: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-326-2400
TELEFAX: 415-326-2422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
186 lnSerMetThrSerAspProTyrIleLysMetThrIleLeu......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/0 FILING DATE: 29-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME/KEY:
                                                                                                                                                                                                                                                    erGluGluLysGlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyr 163
                                           TGGCCTTCCTAATGATGAGCCCATCCTTTCATTCTCACCGAAAACAT 4368
                                                                                   .GlyLeuProAlaMetAspGlu.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
5198..5285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
5183..5195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3..5180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      158.00
0.919
49.711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/609,049A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Percent Identity: 23.410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2307K-063700US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to: 5285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #1.25
                                                                                   .
G
                                                                                   186
```

```
seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-170-996-29
                                                                                                                                                                                                   seq_documentation_block:
                                                                                                                                             Sequence 29, Application US/09170996 Patent No. 6291220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4569 CCTGGCTTTCCTAATAGGATGGTTCTTGGAAGAACACACATAAAAAGATGT 4618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4469 AAGAGAAGGACACCTTGAACCATCATTTGTATTCCGGACATTTGATGAAT 4518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4419 CATAAGAAATACAACCCAGATAAACACTATATTTATGTGGTTCGAATTCT 4468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4749 .....ATAGCTAGGTCTGCAGGTGCAGTTCCCTTCAGCC 4782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4719 CCTTTACTTCGTGATGAGAAAGCTGAAGGA......4748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4669 ATGCATCAACAGATGTAGCAGAGTGTGATCTTGTTTGTACTTTTTTCCAC 4718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4619 TGCAGCCAAGAGGAAAATTGAATTAAACAGTTATTTACAGAGTTTGATGA 4668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4519 TTCAGGAACTTCACAATAAGCTCAGTATTATTTTTCCTCTTTGGAAATTA 4568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4783 CAACTCTGGGCCAAATAGGAGGAGCAGTGAAGTTATCTGTTTCTTACCGA 4832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4877 GACTGAAGATGGGGCTGAC...CCAAATCCCTATGTCAAAACATACCTGC 4923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4833 AAT.....GGCACCCTCTTCATCATGGTGATGCACATCAAGATCTTGT 4876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  211 uArgLys...ThrLeuAspProAla.....PheAspGlu. 221
                                                                                                                                                                                                                                                                                                                          5074 CACTGCGGGAGAATTTCTTCTTGGGTGGAATAACCCTG 5111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4974 ACTAGGAACCCAACATTCAATGAAATGCTTGTATATAGTGGATACAGCAA 5023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4924 TTCCAGATACCCACAAAACGTCAAAACGTAAAACCAAAATTTCACGTAAA 4973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     276 uIleIleLysArgAsnValArgLysSerSerGlyArg...... 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        260 ProLeuSerGlyIleGluLeuSerGluGlyLysMetLeuMetAsnArgGl 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    247 rgPheSerArgAsp......AspIleIleGlyGluValLeuIle 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236 uAla.....LeuHisPheThrIleLeuSerPheAspA 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   229 Pro......TyrThrGlnIleGlnGluLe 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   222 .....ThrpheThrPheTyrGlyIle 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          315 oLysSerAspValSerGlyLeuSerAspProTyrValLysValAsnLeuT 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         364 sGluGlyLeuGluAspIleSerValGluPheLeuValLeuAspSerGluA 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  349 ThrProAsnAlaValPheAsnGluLeuPheValPheAsp...IleProCy 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              332 yrHisAlaLysLysArgIleSerLysLysLysThrHisValLysLysCys 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299 SerThrThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuPr 315
APPLICANT: Williams, Lew APPLICANT: Molz, Lisa APPLICANT: Chen, Yen-Wen TITLE OF INVENTION: No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAACTCTGAGGCAGAGAGAACTTCAACTGAGTGTACTCAGTGCAGAAT 5073
                                                                                                                                                                                                                                                                                                                                                                                rgGlySerArgAsnGluValIleGlyGlnLeuValLeu 393
                                                                                           Williams, Lewis T.
          No. 6291220el PI 3-Kinase Polypeptides
```

```
alignment_block:
US-09-680-121-2 x US-09-170-996-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; LOCATION:
US-09-170-996-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality: 158.00
Ratio: 0.919
Percent Similarity: 49.711
                                                                                                                                                                                                                                                                                                                                                                                                      Align seg 1/1 to: US-09-170-996-29 from: 1 to: 5285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 08/609,049

EILING DATE: 29-FEB-196

ETILING DATE: 29-FEB-196

ATTORNEY/AGENT INFORMATION:

NAME: Dow, Katen B.

REGISTRATION NUMBER: 29.684

REFERENCE/DOCKET NUMBER: 2307K-0637

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 415-326-2422
TRECEFAX: 415-326-2422
INFORMATION FOR SEQ ID NO: 29:
SEQUENCE CHARACTERISTICS:
LENGTH: 5285 base_pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend and Crew LLP
STREET: Two Embarcadero Center, 8th Floor
                                    4281 AATTTC.....TTCATTCATAACCTTGCTCAGCTACGTTTTTC 4318
                                                                                                                                 4237 CTAGGCTGATTGAGTCAAGTTTGGGAAGCATT.....GCCACAAAGTTT 4280
                                                                                                                                                                                                                          4187 AGATGCACTTCAGCCCCAAACTACAGATGCTGAAGCTACTATTTTCTTTA 4236
                                                                                                                                                                                                                                                                                                                    4137 CCTTCAGGATTGCCAGAACTCACAAGTATTCAGGATCTGAAATATGTTAG 4186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LOCATION: FEATURE:
                                                                                                                                                                           147 erGluGluLysGlnGluLysLeuGlyThrLeuPhePheSerLeuGluTyr 163
                                                                                                                                                                                                                                                               131 sGluSerValSerProGluSerLeuLysSer...SerThrSerLeuThrS 147
                                                                                                                                                                                                                                                                                                                                                            115 ProSerAspLeuGluAsnAlaThrProLysLeuPheLeuGluGlyGluLy 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: DNA (genomic)
                                                                                 164 AsnPheGluArgLysAlaPheValValAsnIleLysGluAlaArg..... 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: Two Embarcac
CITY: San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY:
.GlyLeuProAlaMetAspGlu.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
3..5180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
5198..5285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
5183..5195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    us/09/170,996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Identity: 23.410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2307K-063700US
...... 186
```

```
seq_documentation_block:
; Sequence 27, Application
; Patent No. 5948664
                                                                                                                           seq_name:
GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5024
                                                                                                                                                                                                                                                                                                                                                                                                    4974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4783 CAACTCTGGGCCAAATAGGAGGAGCAGTGAAGTTATCTGTTTCTTACCGA 4832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4419 CATAAGAAATACAACCCAGATAAACACTATATTTATGTGGTTCGAATTCT 4468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4369 ACTCCTTTAGACAAGATGGCCGGATCAAGGAAGTCTCTGTTTTCACATAT 4418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4619 TGCAGCCAAGAGGAAAATTGAATTAAACAGTTATTTACAGAGTTTGATGA 4668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4569 CCTGGCTTTCCTAATAGGATGGTTCTTGGAAGAACACACATAAAAGATGT 4618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          229
                                                                                                                                                                                                                                                                                                                                                                                                                                                      349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     247 rgPheSerArgAsp......AspIleIleGlyGluValLeuIle 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             236 uAla.....LeuHisPheThrIleLeuSerPheAspA 247
                                                                                                                                                                                                                                                                                      yrHisAlaLysLysArgIleSerLysLysLysThrHisValLysLysCys 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                oLysSerAspValSerGlyLeuSerAspProTyrValLysValAsnLeuT 332 :::||| ::: |||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               uIleIleLysArgAsnValArgLysSerSerGlyArg......
                                                                                                                                                                                 CACTGCGGGAGAATTTCTTCTTGGGTGGAATAACCCTG
                                                                                                                                                                                                                                   rgGlySerArgAsnGluValIleGlyGlnLeuValLeu 393
                                                                                                                                                                                                                                                                                                                                         sGluGlyLeuGluAspIleSerValGluPheLeuValLeuAspSerGluA 381
                                                                                                                                                                                                                                                                                                                                                                                              ACTAGGAACCCAACATTCAATGAAATGCTTGTATATAGTGGATACAGCAA 5023
                                                                                                                                                                                                                                                                                                                                                                                                                                   ThrProAsnAlaValPheAsnGluLeuPheValPheAsp...IleProCy 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACTGAAGATGGGGCTGAC...CCAAATCCCTATGTCAAAACATACCTGC 4923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAT.....GGCACCCTCTTCATCATGGTGATGCACATCAAAGATCTTGT 4876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SerThrThrAsnThrLeuThrValValValLeuLysAlaArgHisLeuPr 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTTTACTTCGTGATGAGAAAGCTGAAGGA......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCATCAACAGATGTAGCAGAGTGTGATCTTGTTTGTACTTTTTTCCAC 4718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAGAAGGACACCTTGAACCATCATTTGTATTCCGGACATTTGATGAAT 4518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        uArgLys...ThrLeuAspProAla...........PheAspGlu. 221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lnSerMetThrSerAspProTyrIleLysMetThrIleLeu.....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCCAGATACCCACAAAACGTCAAAACGTAAAACCAAAATTTCACGTAAA 4973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ProLeuSerGlyIleGluLeuSerGluGlyLysMetLeuMetAsnArgGl 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCAGGAACTTCACAATAAGCTCAGTATTATTTTTCCTCTTTGGAAATTA 4568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .....ThrPheThrPheTyrGlyIle 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ......ProGluLysLysHisLysValLysThrArgValLe 211
                                                                                                                        /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-609-049A-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ........GlyGluLeuLeuIleSerLeuCysTyrGln 298
                                             US/08609049F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .....TyrThrGlnIleGlnGluLe 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4748
```

```
alignment_block:
US-09-680-121-2 x US-08-609-049A-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; NAME/KEY:
; LOCATION:
US-08-609-049A-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: US-08-609-049A-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: PatentIn Release #1.0, V.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/609,049A
FILING DATE: 29-FEB-1996
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 415-326-2422 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                    5132 TGCACTTTCCTTTGGTTAAACTGCACAGTCTGCCGGCTGGTGTGCATGTG
                                                                                                                                                                                                                                                                                                                                                               5082 TTTGTTCCGGTCATATCGGGAATTCACGGAATTCCATCAGAAGTTATGCA 5131
                                                     5282 AGCTCGTTTACACATTCTTTCACCCGCTGCTGCGCGATCAGCAGGAAGCC 5331
                                                                                                                                 5232 GCGATTTTTGAAATCGTTGTTCGATGCGTCCGAGGAAATAGCCCATTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Dow, Karen B.
REGISTRATION NUMBER: 29,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 415-326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: No. 5948664el PI 3-Kinase Polypeptides NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                  92 LeuHisLeuAspLeuGluLysArgAspLeuAsnGlyAsnPhePro...Ly
                                                                                                                                                                                                                                            75 laAspAspLysAsnGluValLysAsnLysProAlaValProLysAsnSer
                                                                                                                                                                                                                                                                                                                     69 rLysLysPheGly......A
                                                                                                                                                                                                                                                                                                                                                                                                   53 PheValHisValLeuLysGlyValAspIleTyrProGluAsnLeuAsnSe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
STREET: Tv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET · NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CENGTH:
LysLeuPheLeuGluGlyGluLysGluSerValSerProGluSerLeuLy
                                                                                           sThrAsnLeuLysProGlySerProSerAspLeuGluAsnAla.ThrPro
                                                                                                                                                                                                            GGCCGTTCCAATATCAAATCCGTGGCAGAAAAACGACTACCTCTTATACA 5231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94111-3834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: Townsend and
Two Embarcadero
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chen, Yen-Wen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Williams, Lewis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Molz, Lisa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
148..5775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    157.00
0.981
57.348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/609,049A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29,684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Percent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Townsend and Crew LLP Center, 8th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Η
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2307K-063700US
                                                                                                                                                                                                                                                                                                                                                                                                                                           from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Identity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version
                                                                                                                                                                                                                                                                                                                                                                                                                                           to: 6831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10
22.939
                                                                                             123
                                                                                                                                                                      107
                                                                                                                                                                                                                                                                                    5181
                                                                                                                                                                                                                                                                                                                           75
                                                                                                                                                                                                                                                                                                                                                                                                     69
```

```
alignment_block:
US-09-680-121-2 x US-09-170-996-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; NAME/KEY:
; LOCATION:
US-09-170-996-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: US-09-170-996-27 from: 1 to: 6831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: DOW, KAYEN B.

REGISTRATION NUMBER: 23.684
REFERENCE/DOCKET NUMBER: 2307
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-326-2400
TELEFAX: 415-326-2422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: 415-326-2422
INFORMATION FOR SEQ ID NO: 27:
SEQUENCE CHARACTERISTICS:
5496 CAACACATATGTGAAGTGCTACCTAAAACCGGATCCCAAAAAGGAGACCA 5545
                                                                                                                                                                                                                5405 TACGACTATCGCTGCAATAT.....CAACGCGGCGTACTTACTGTGATG 5448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5182 GGCCGTTCCAATATCAAATCCGTGGCAGAAAAACGACTACCTCTTATACA 5231
                                                                                                                                                                                                                                                                                                                                  5355 GGAGGTGAAGCAACCGTCGCGGGATAATCCCCCACGAGATTGGCCAAA 5404
                                                                                                                                                                                                                                                                                                                                                                                                                                       5332 AAGCTTGGGATG......5354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5282 AGCTCGTTTACACATTCTTTCACCCGCTGCTGCGCGATCAGCAGGAAGCC 5331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5232 GCGATTTTTGAAATCGTTGTTCGATGCGTCCGAGGAAATAGCCCCATTCCG 5281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5132 TGCACTTTCCTTTGGTTAAACTGCACAGTCTGCCGGCTGGTGTGCATGTG 5181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5082 TTTGTTCCGGTCATATCGGGAATTCACGGAATTCCATCAGAAGTTATGCA 5131
                                                                                                                                                              174 IleLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerMetThrSe 190
                                                                                                                                                                                                                                                                                                                                                                                  140 sSerSerThrSerLeuThrSerGluGluLysGlnGluLysLeuGlyThrL 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             124 LysLeuPheLeuGluGlyGluLysGluSerValSerProGluSerLeuLy 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         107 sThrAsnLeuLysProGlySerProSerAspLeuGluAsnAla ThrPro 123
                                                  190 rAspProTyrIleLysMetThrIleLeuProGlu.....LysLysHisL 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/609,049
FILING DATE: 29-FEB-1996
ATTORNEY/AGENT INFORMATION:
NAME: Dow, Karen B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92 LeuHisLeuAspLeuGluLysArgAspLeuAsnGlyAsnPhePro...Ly 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75 laAspAspLysAsnGluValLysAsnLysProAlaValProLysAsnSer 91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69 rLysLysPheGly......A 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    53 PheValHisValLeuLysGlyValAspIleTyrProGluAsnLeuAsnSe 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 6831 base pairs TYPE: nucleic acid STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                             euPhePheSerLeuGluTyrAsnPheGluArgLysAlaPheValValAsn 173
                                                                                                        ATACACCACGCCAAAGAACTGCCC...ATGTTACAGGGCGGTCAGGAGCC 5495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
148..5775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  157.00
0.981
57.348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        percent Identity: 22.939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2307K-063700US
```

seq_documentation_block:
; Sequence 27, Applicati
; Patent No. 6291220

6291220 US/09170996

GENERAL INFORMATION:

APPLICANT: Williams, ...
APPLICANT: Williams, ...
APPLICANT: Molz, Lisa
APPLICANT: Chen, Yen-Wen
TITLE OF INVENTION: No. 6291220el PI 3-Kinase Polypeptides
TITLE OF INVENTION: No. 6291220el PI 3-Kinase Polypeptides
NUMBER OF SEQUENCES: 32
CORRESPONDENCE ADDRESS:
ADDRESSEE: Two Embarcadero Center, 8th Floor
STREET: Two Embarcadero Center, 8th Floor

COUNTRY: USA
ZIP: 9411-3834
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:

CLASSIFICATION: 435 APPLICATION NUMBER: FILING DATE:

US/09/170,996

seq_name: /cgn2_6/ptodata/2/ina/6B_COMB.seq:US-09-170-996-27

5822 TGCCTACCGACAATCAGGCCTAGGATAATGCCA 5854

305 ThrValValValLeuLysAlaArgHisLeuPro 315

5772 GAACTGACCAGATCCTAGGGACGAGCTATTTTGAACCTCTTGGGACACTC 5821

288 gGly.GluLeuIeserLeuCysTyrGlnSerThrThrAsnThrLeu 304

5722 GACCTGCGACAGGAGCTCGTCGACTGGTATCGCCTGGGCGCGGTGTCCAG 5771

5693 GA......GGCTTCGATATGGATCTGTCGAAGTAC 5721

255 lyGluValLeuIleProLeuSerGlyIleGluLeuSerGluGlyLysMet 271

272 LeuMetAsnArgGluIleIleLysArgAsnValArgLysSerSerGlyAr 288

5643 TCAGGTTACGGTTTGGTCGCACGACACCCTGCAGGAGAACGAGCTGCTTG 5692

238 uHisPheThrIleLeuSerPheAspArgPheSerArgAspAspIleIleG 255

5596 ACTITGGAG...TACCGAATGCCACTGAATATTATTCAAGAGCGCCGCCT 5642

222 ThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLe 238

5546 AACGCAAGACCAAAGTGGTGCGCAAGACCTGTGTGCCCAGTTTCATGGAA 5595

205 ysValLysThrArgValLeuArgLysThrLeuAspProAlaPheAspGlu 221

5496 CAACACATATGTGAAGTGCTACCTAAAACCGGATCCCCAAAAAGGAGACCA 5545

190 rAspProTyrIleLysMetThrIleLeuProGlu....LysLysHisL 205

5449 ATACACCACGCCAAAGAACTGCCC...ATGTTACAGGGCGGTCAGGAGCC 5495

5405 TACGACTATCGCTGCAATAT.....CAACGCGGCGTACTTACTGTGATG 5448

157 euPhePheSerLeuGluTyrAsnPheGluArgLysAlaPheValValAsn 173

174 IleLysGluAlaArgGlyLeuProAlaMetAspGluGlnSerMetThrSe 190

5355 GGAGGTGAAGCAACCGTCGCGGGATAATCCCCACGAGATTGGCCAAA 5404

140 sSerSerThrSerLeuThrSerGluGluLysGlnGluLysLeuGlyThrL 157

5332 AAGCTTGGGATG......535

Patent No Patent	319 742 seq_name:	9 0 4	267 546 284 592	447 237 484 251 534	405 220
tent No. 6001619 ENERAL INFORMATION: APPLICANT: Beach, David H. APPLICANT: No. 601619 TITLE OF INVENTION: Ubiquitin Ligases, and Uses Related There NUMBER OF SEQUENCES: 6 CORRESPONDENCE ADDRESS: ADDRESSE: FOLEY, HOAG & ELIOT LLP STREET: One Post Office Square CITY: Boston STATE: MA COUNTRY: USA ZIP: 02109-2170 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION NUMBER: US/08/539,205A ETLING DATE: 04-OCT-1995 ATTORNEY/AGENT INFORMATION: NAME: Vincent, Matthew p. REGISTRATION NUMBER: 36,709	alSerGlyLeuSerAspProTyrValLysVal 329 :: :::::: TCTCTGGCACATCTGACCCATTTGCACGTGTG 773 : /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-539-205A-5	ArgGlyGluLeuLeuIleSerLeuCysTyrGlnSerThrThrAs 302 ::: ::: ::: CAGGGTGAGATCTGCCTGTCAGTGCAGATGCTGGAGGATGGGCAGGGCCG 691 nThrLeuThrValValValLeuLysAlaArgHisLeuProLysSerAspV 319	rGluGlyLysMetLeuMetAsnArgGluIleIleLysArgAsnValArg. 283	laLeuHisPheThrIleLeuSerPheAspArgPheSerArg 250 :::	GTGGTGGCCAGGACAGCTACTGTCTGGAGGAGGCCTGGGCCCC

```
; NAME/KEY:
; LOCATION:
US-08-539-205A-5
                                                                                                                                                                                                                                                                     seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alignment_block:
US-09-680-121-2 x US-08-539-205A-5
                                                                                                                                                                                                                                                                                                                               seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-909-954-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alignment_scores:
                                                                                                                                                                        Sequence 3, Application US/08909954A Patent No. 6100058 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Align seg 1/1 to: US-08-539-205A-5 from: 1 to: 3226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
APPLICANT: Allen, Maxine J.
APPLICANT: Buckler, Alan J.
APPLICANT: Buckler, Alan J.
TITLE OF INVENTION: GAP12 Genes and their Uses
FILE REFERENCE: SE0-11P
CURRENT APPLICATION NUMBER: US/08/909,954A
CURRENT FILING DATE: 1997-08-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         195 sMetThrIleLeuProGluLysLysHisLys......ValLysT 208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                179 GlyLeuProAlaMetAspGluGlnSerMetThrSerAspProTyrIleLy 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               139 ....AGCTTTGAGGAAAAG......
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: cDNA FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                          462 TAAGGGATTTTTGCGATTGAAAATGGCCTAT 492
                                                                                                                                                                                                                                                                                                                                                                                                                                             287 yArgGlyGluLeuLeuIleSerLeuCysTyr 297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412 TATACATTTAAGGACTTTCTCCTCAGACCAAGAAGTCATAAGTCTCGAGT 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              272 ...LeuMetAsnArgGluIleIleLysArgAsnValArgLysSerSerGl 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                362 ACGTGCCCCTTAGTCACCTTCCGACAGAAGATCCAACCATGGAGCGACCC 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   258 euileProLeuSerGlyIleGluLeuSerGluGlyLysMet..... 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              312 AGTATTTGACGAAAATAGACTGACACGAGACGGCTTCCTGGGCCAGGTGG 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 rIleLeuSerPheAspArgPheSerArgAspAspIleIleGlyGluValL 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               274 TTCAGGGTAAACCCATCTAATCAC.....AGACTCCTATTTGA 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          225 PheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHisPheTh 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    224 CAAAAACAATTAAAAAGACACTGAACCCAAAATGGAATGAAGAATTTTAT 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 208 hrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrPheThr 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         174 ACTTTCATTGTACGTAGCGGATGAGAATAGAGAACTTGCTTTGGTCCAGA 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       154 .....TATAGTGATCCGTATGTGAA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  162 luTyrAsnPheGluArgLysAlaPheValValAsnIleLysGluAlaArg 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 106 ......CCAGCTGAACACTTTCCAGCCTTGTTTTTCAGC.... 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           145 uThrSerGluGluLysGlnGluLysLeuGlyThrLeuPhePheSerLeuG 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                129 GlyGluLysGluSerValSerProGluSerLeuLysSerSerThrSerLe 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     58 GGCCAGGGAGCCGGAGGGTCACCAAGGTAGATTTCCAGCAGCGCTAGT.. 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
400..2901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       135.00
1.392
54.802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length: 177
Gaps: 6
Percent Identity: 25.424
```

```
alignment_block: US-09-680-121-2 \times US-08-909-954-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; NAME/KEY: CDS
; LOCATION: (0)...(0)
US-08-909-954-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Align seg 1/1 to: US-08-909-954-3 from: 1 to: 3117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ratio: 1.091
Percent Similarity: 47.082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQ ID NOS: 15
SOFTWARE: FASTSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 3117
TYPE: DNA
ORGANISM: M. musculus
FEATURE:
FEATU
                                                                                                                  290 GluLeuIeuIleSerLeuCysTyrGlnSerThrThrAsnThrLeuThrVa 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                440 CAACCTGAGCCGAGTGGATCCAGACGCTGAAGTACAGGGTGAGGTCTGCC 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     390 TTGAGCAAAGAGGCGATCACAGCCGACCCTCGAGGGATCGACAGCTGGAT 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 340 TGCTGGATGAGGACACCGTTGGACACGATGACATCATTGGGAAGATCTCA 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       242 leLeuSerPheAspArgPheSerArgAspAspIleIleGlyGluValLeu 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             290 GGAGTACACCGTTCACCTTCCATTGGACTTCCACCACCTGGCCTTCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   261 TGGAGGAGCCTGAGCCCC.....TTTTGGGGGGGA 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             212 ArgLysThrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyIl 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217 TGGTGAAAGTG.....GATGACCAAGTGGTGGCCAGGACAGCAACCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 195 ysMetThrIleLeuProGluLysLysHisLysValLysThrArgValLeu 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           170 AGCACTGCCCGCCAAGGAC...GTGTCTGGAAGCAGTGACCCCTATTGTC 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  178 gGlyLeuProAlaMetAspGluGlnSerMetThrSerAspProTyrTleL 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                150 .....ATCCGCGTGGTGGAGGGACG 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           145 TGAGT..... 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128 uGlyGluLysGluSerValSerProGluSerLeuLysSerSerThrSerL 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112 ProGlySerProSerAspLeuGluAsnAlaThrProLysLeuPheLeuGl 128
490 TGGATGTGAAGCTATTGGAG......GATGCTCGGGGC 521
                                                                                                                                                                                                                                                                                                                                                               273 etAsnArgGluIleIleLysArgAsnValArgLysSerSerGlyArgGly 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       259 IleProLeu.....SerGlyIl 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         228 eProTyrThrGlnIleGlnGluLeuAlaLeuHis......PheThrI 242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   162 GluTyrAsnPheGluArgLysAlaPheValValAsnIleLysGluAlaAr 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              145 euThrSerGluGluLysGlnGluLysLeuGlyThrLeuPhePheSerLeu 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        105 .....GAAAGTTTGGGACTGTGCGACATGGCCAAGAGCGGCTCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63 CCTCCTGGTCCAGCCTCAGAACCTCGGCAGACTCCTTGCCTG...... 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       132.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pength: 257
Gaps: 13
Percent Identity: 24.514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     339
```

```
; NAME/KEY:
; LOCATION:
US-08-895-601-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq_documentation_block:
                                                                                                       alignment_block:
                                                                                                                                                                                                          alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seq_name: /cgn2_6/ptodata/2/ina/6A_COMB.seq:US-08-895-601-2
                                                                                   US-09-680-121-2 x US-08-895-601-2
                                            Align seg 1/1
                                                                                                                                                 Percent Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/08895601 Patent No. 6060262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/895
FILING DATE: 16-JUL-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Vincent, Matthew P.
REGISTRATION NUMBER: MIV-
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: 617-832-7000
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: U410 COMPUTER READABLE FORM:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: FOLEY, HOAG & ELIOT LLP
STREET: One Post Office Square
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: REGULATION OF KAPPA B (IKB) DEGRADATION, TITLE OF INVENTION: AND METHODS AND REAGENTS RELATED THERETO NUMBER OF SEQUENCES: 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Glass, Susan J. APPLICANT: Rolfe, Mark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              337 ArgileSerLysLysLysThr 343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             323 erAspProTyrValLysVal.....AsnLeuTyrHisAlaLysLys 336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 306 lValValLeuLysAlaArgHisLeuProLysSerAspValSerGlyLeuS
                                                                                                                                                                                                                                                                                                                                             FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
166 GluArgLysAlaPheValValAsnIleLysGluAlaArgGlyLeuProAl 182
                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
TOPOLOGY: lir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGACCCATTTGCCCGTGTGTTCTGGGGCAAC.....CATAGTTTGGAA 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ....GTGAGACAGGCCAGGGACCTGGCCCCCCGGGACATCTCTGGCACAT 585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTCGACCATCAAGAAGACC 650
                                                                                                                                                                     Quality:
Ratio:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MA
                                         to: US-08-895-601-2 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                2790 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Strack, Peter J.
                                                                                                                                                                                                                                                                                                CDS
2..2782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Beer-Romero, Peggy
                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      617-832-1000
                                                                                                                                                                                                                                                                                                                                                                CDNA
                                                                                                                                               117.00
1.330
60.690
                                                                                                                                                                                                                                                                                                                                                                                                          both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/08/895,601
                                                                                                                                             Percent Identity: 22.759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MIV-096.01
                                            ţo:
                                            2790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   323
```

```
seq_name: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-642-846-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq_documentation_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
INFORMATION FOR SEQ
                                                                                              FILING DATE: 03-MAY-1996
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: MUETING, ANN M.
REGISTRATION NUMBER: 33,97
REFERENCE/DOCKET NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  463
                     TELECOMMUNICATION INFORMATION:
TELEPHONE: 612-305-1217
TELEFAX: 612-305-1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: HOSTETTER, MARC
APPLICANT: GALE, CHERYL A.
APPLICANT: BENDEL, CATHERI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: CANDIDA ALBICANS GENE, INTEGRIN-LIKE TITLE OF INVENTION: PROTEIN, ANTIBODIES, AND METHODS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               274 nArgGluIleIleLysArgAsnValArgLysSerSerGlyArgGlyGluL 291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             262 SerGlyIleGluLeuSerGluGlyLysMet.....LeuMetAs 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  363 AAAACCGATTGACAAGAGATGATTTCCTAGGTCAAGTGGATGTTCCACTT 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               245 heAspArgPheSerArgAspAspIleIleGlyGluValLeuIleProLeu 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 325 TCCT.....CAGCAGCACCGGCTTCTTTTGAAGTGTTTGACG 362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     275 AAAAAGAGTTTGAATCCAAAGTGGAATGAAGAATATTATTCAGAGTTCA 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         182 aMetAspGluGlnSerMet...ThrSerAspProTyrIleLysMetThrI 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: UZIP: 55401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: MINNEAPOLIS STATE: MINNESOTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: MUETING, RAASCH, GEBHARDT & SCHWAPPACH, P.A. STREET: 119 NORTH FOURTH STREET, SUITE 203
                                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             euLeuIleSerLeuCysTyrGlnSerThrThrAsn 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   eProTyrThrGlnIleGlnGluLeuAlaLeuHisPheThrIleLeuSerP 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCCAAGAAGGATATATTGGGAGCTAGTGATCCTTACGTGAGAGTGACGT 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGAGACTAAAAATGACTTATTTACCTAAAACCAGT 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGATTTTGTTCTTCATCCAAGAAGTCACAAATCAAGAGTTAAAGGTTATC 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATCCATTACCGACAGAAATCCAAGATTGGAGAGACCATATACATTTAA 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ArgLysThrLeuAspProAlaPheAspGluThrPheThrPheTyrGlyIl 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      leLeuProGluLysLys......HisLysValLysThrArgValLeu 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1, Application US/08642846
). 5886151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KENDRICK, KATHLEEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAO, NIAN-JUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BENDEL, CATHERINE M
                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HOSTETTER, MARGARET K.
  ID NO:
                                                                                                                                                                                                                                                       US/08/642,846
                                                                                                                   33,977
                                                                                                    110.00280101
                                                                                                                                                                                                                                                                                                         Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          USE
```

```
alignment_block:
US-09-680-121-2 x US-08-642-846-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; MOLECULE TYPE: DNA (genomic) US-08-642-846-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alignment_scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Quality: 102.50
Ratio: 0.551
Percent Similarity: 42.177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Align seg 1/1 to: US-08-642-846-1 from: 1 to: 5194
                                                                                                                                                                                                                   2951 AACCAACTATAAAGGCAGAAGGAATGAAAACATTGCCAAGTATGGATAAA 3000
                                                                                                                                                                                                                                                                                                                                           2901 ACCTTGTGACATGTATAATGATATTTTTGATGATTTCGGTGCGGGTTCTA 2950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2751 ACGGTTATCAGCTAATAAGGCAGCGCCAAATCAGGCACCACCATTGCCAC 2800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2566 TTACCAGAATTATCTGAAGACTCT......GGATTTAAAGA 2600
                                                                                           3001 GATGATGTCAAGAGGATTTTGAATGCAAAGAAAGGTGTGACTCAAGATGA 3050
                                                                                                                                                                                                                                                   175 ys.......GluAlaArgGly......LeuProAlaMetAsp... 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2851: AGATTTAGAGTGCCCACATTTGAAATTAGAAGAACTTCTTCAGCATTAGC 2900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2801 CACAACGACCATCTTCAACTCGTTCCAATTCAAATAAACGAGTGTCC 2850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2701 GTTGTTGAACCTCCTGAACCGAAATCATATGCTGAAATTAGAAATGCTAG 2750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2601 TITGAATTTTGCCAACTACTCCAATAACACCAACAGACCAAGAAGTTTTA 2650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2539 ...... ATGGATGATTTGAATGTATCTCAATTT 2565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2493 ATTCAAAGAGGTAAATGTCATGTCAAGAAGAGTTGTTAGTCCAGAC.... 2538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2443 CGTGTTACTAGTGATAAAGTGAAAAATCCCAAATGCCATACAATTCAAGAA 2492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2651 CTCCATTGAGCACTAAAAATGTCTTGTCGAATATTGATAACGATCCTAAT 2700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      192 oTyrIleLysMetThrIleLeuProGlu.....LysLysHisLysValL 207
                                                                                                                                                    185 ......GluGlnSerMetThrSerAspPr 192
                                                                                                                                                                                                                                                                                                                                                                                                       163 .....TyrAsnPheGluArgLysAlaPheValValAsnIleL 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           129 ......GlyGluLysGluSerValSerP 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     117 AspLeuGluAsnAlaThrProLysLeuPheLeuGlu...... 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100 pLeuAsn...GlyAsnPheProLysThrAsnLeuLysProGlySer.... 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENCTH: 5194 base pairs
TYPE: nucleic acid
STRANDEDMESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84 LysProAlaValProLysAsnSerLeuHisLeuAspLeuGluLysArgAs 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67 euAsnSerLysLysLysPheGlyAlaAspAspLysAsnGluValLysAsn 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50 oTyrLysPheValHisValLeuLysGlyValAspIleTyrProGluAsnL 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40 ArgLysSerSerLysSerAsnLysThrPro......pr 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            roGluSerLeuLysSerSerThrSerLeuThrSerGluGluLysGlnGlu 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length: 441
Gaps: 24
Percent Identity: 20.181
```

seq_docu ; Sequen ; Patent	seq_name:	349 3647	339 3597	328 3553	315 3503	300 3453	3403	299	295 3353	279 3303	266 3253	256 3203	239 3153	224 3121	207 3101	3051
9_documentation_block: Sequence 16, Application US/08392625 Patent No. 5837485	: /cgn2_6/ptodata/2/ina/5B_COMB.seq:US-08-392-625-16	rProAsnAlaValPheAsn 355 ::: CCCCTAGAAAATCACCAAT 3665	erLysLysThr.HisValLysLys	LysValAsnLeuTyrHisAlaLysLysArgIleS 339 ::: ::: GATGATGGATTGGCCAGTGCACCTGAAACACCAAGAACTCC 3596	ProLysSeraspValSerGlyLeuSerAspProTyrVal	ThrThrAsnThrLeuThrValValValLeuLysAlaArgHisLeu 314 ::: :::::::: ::: TAGTTTTAACCAATTGGATATGAATTTTGATGACCAAGCTACAATTGGTC 3502	GTGCTGAACAACAGTGATAATGTCGCCATCAGTGGTAATGCTAGTACTAT	299	LeuCysTyrGlnSer	SATGASHValArgLysSerSerGlyArgGly.GluLeuLeuIleSer 294 :	LeuSerGluGlyLysMetLeuMetAsnArgGluIleIleLy 279 ::::::: :::: ::: TTATTATCTGCTGATCGTTTGTTTATGGAACAAGAAGTACATCCGTTAAG 3302	1uValleuIleProLeuSerGlyIleGlu	SPheThrIleLeuSerPheAspArgPheSerargAspAspIleIleGlyG 256 ::: :::::::::::::::::::::::::::::::	ThrPheTyrGlyIleProTyrThrGlnIleGlnGluLeuAlaLeuHi 239	ysThrArgValLeuArgLysThrLeuAspProAlaPheAspGluThrPhe 223	ATATATAAATGCCAAACTTGTTGATCAAAAAACCTAAAAAGAATTCAATTG 3100

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Gtz, Friedrich
APPLICANT: Gtz, Friedrich
APPLICANT: Schnell, No. 5837485bert
APPLICANT: Augustin, Johannes
APPLICANT: Engelke, Germar
APPLICANT: Engelke, Germar

APPLICANT:

APPLICANT: TITLE OF I

T: Rosenstein, Ralf
T: Kaletta, Cortina
T: Klein, Cora
T: Wieland, Bernd
T: Kupke, Thomas
T: Kupke, Thomas
T: Jung, G nther
T: Kellner, Roland
INVENTION: Biosynthetic Process For The Preparation

```
alignment_scores:
Quality:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TOPOLOGY: US-08-392-625-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alignment_block:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Quality: 100.50
Ratio: 0.493
Percent Similarity: 46.050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Align seg 1/1 to: US-08-392-625-16 from: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-680-121-2 x US-08-392-625-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (202) 371-2540
INFORMATION FOR SEQ ID NO: 16
SEQUENCE CHARACTERISTICS:
LENGTH: 8700 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/876,791
FILING DATE: 30-APR-1992
ATTORNEY/AGENT INFORMATION:
NAME: Esmond, Robert W.
REGISTRATION NUMBER: 32,893
REGISTRATION NUMBER: 3652.09800
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                    2466 ......TTAATGTCACAATTATTTGTTTCTAAAAACTATTTGCAAATA 2507
                                                                                                                                                                                                                                                                                                                                                                                                                                               2444 TAAATATTTAGATATTGTTAAT......2465
                                                                                                                                                 2543 ACAAAGTTTAGCTGATAATATTAGTGAAGCAGCATATATTCTCTGGTTA. 2591
                                                                                                                                                                                                                                                    2508 GATACCTATATA...........GATTATTCAAGAAATGAATTAAA 2542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2394 TCTAATGAAATTACAAAATATTCTAAAATGCCTTTAGGAAAAGGAGAATA 2443
                                                    2592 ......TTATCTCCTAATCATTTTGGTACAAAAACTATT 2624
                                                                                                                                                                                             111 sProGlySerProSerAspLeuGluAsnAlaThrProLysLeuPheLeuG 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/392,625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC-DOS/MS-DOS
COPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: Of Chemical Compounds NUMBER OF SEQUENCES: 42
CORRESPONDENCE ADDRESS:
145 LeuThrSerGluGluLysGlnGluLysLeuGlyThrLeuPhePheSerLe 161
                                                                                                                                                                                                                                                                                                95 AspLeuGluLysArgAspLeuAsnGlyAsnPheProLysThrAsnLeuLy 111
                                                                                                                                                                                                                                                                                                                                                                                                   78 ysAsnGluValLysAsnLysProAlaValProLysAsnSerLeuHisLeu 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 pIleTyrProGluAsnLeuAsnSerLysLysLysPheGlyAlaAspAspL 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45 SerAsnLysThrProProTyrLysPheValHisValLeuLysGlyValAs 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: C
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 1100 New CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                luGlyGluLysGluSerValSerProGluSerLeuLysSerSerThrSer 144
::::|||||||::: ::: ::::::|||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: Sterne, Kessler,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kessler, Goldstein & Fox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length: 443
Gaps: 22
Percent Identity: 20.767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0652.0980002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             to: 8700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #1.25
```

398 3442	83SerArgAsnGluValIleGlyGlnLeuValLeuGlyAlaAlaAlaGl	ω ω ω
382 3392	74PheLeuValLeuAspSerGluArgGly	ωωω
373 3342	57 uPheValPheAspIleProCysGluGlyLeuGluAspIleSerValGlu. :::	ω ω ω
357 3310	46 LysLysCysThrProAsnAlaValPheAsnGluLe	32 3
345 3260	29 alAsnLeuTyrHisAlaLysLysArgIleSerLysLysLysThrHisVal ::	3 2 3
329 3228	17 raspvalSerGlyLeuSerAspProTyrValLysV	3 1 3
317 3181	10 LysAlaArgHisLeuProLysSe ::: ::: ::: 32 AATAATAATAGTAGTAGTAGTTGTTTAAATTTTAAATTTACCTAAAAG	31
309 3131	93 leSerLeuCysTyrGlnSerThrThrAsnThrLeuThrValValValLeu :::::: ::::: :::: 82 TAAGCCAATTAAATGAAGGTCCTCTTAACTCAAGAAATGTAAATATTTTG	30
293 3081	78 eLysArgAsnValArgLysSerSerGlyArgGlyGluLeuLeuI ::::	30
278 3040	62 SerGlyIleGluLeuSerGluGlyLysMetLeuMetAsnArgGluIleIl :::::::: :: 09AAGAAAAAAATCAATTACAAAAAAGAAATAGT	30
261 3008	45 heAspArgPheSerArgAspAspIleIleGlyGluValLeuIleProLeu :: :: 80 TTGGAAGGTTTACGGGAAATTTCAATATA	29
245 2979	35 uLeuAlaLeuHisPheThrIleLeuSerP :::: ::: 30 TTTTGCCGTGATAAGTCCAATATTAGGATCTTTTAATGCCGGTGCAACTT	29 2
235 2929	21 GluThrPheThrPheTyrGlyIleProTyrThrGlnIleGlnGl	28 2
220 2879	04 isLysValLysThrArgValLeuArgLysThrLeuAspProAlaPheAsp ::	2 2
20 4 2829	03Lysh	27
202 2779	89 ThrSerAspProTyrlleLysMetThrIleLeuProGluLys :::::::: 42 TCTAATAACATTGCATTTTTAAAAGAAAAGTATTTGCT	1 27
188 2741	177AlaArgGlyLeuProAlaMetAspGluGlnSerMet ::: ::: ::: 692 TCTCAGATATAAATGGATTTGGCTATCCCAAAAAAGACAGTTATAGTTTT	1 26
176 2691	161 uGluTyrAsnPheGluArgLysAlaPheValValAsnTleLysGlu ::: ::: ::: ::: ::: ::: :51 TAAATATGGATTTGAACAA	1 26
2650	2625 AGGAATTATCACGAATTTTTTATGGA	26

415 InTleAla......LysTrpHisVal 421
:::
|||||||||||::
3493 TCGCAACTATTAGAGAAAAATGGCATATT 3521